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TRANSCRIPT OF CONFERENCE ON POLLUTION OF INTERSTATE WATERS OF THE BEAR RIVER, UTAH WYOMING - IDAHO. SECOND SESSION, LOGAN, UTAH, 19 July 1960

Public Health Service
Washington, D.C.

19 July 1960

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TRANSCRIPT OF CONFERENCE

CONFERENCE ON POLLUTION of THE INTERSTATE WATERS OF THE BEAR RIVER

WYOMING - IDAHO - UTAH

Second Session

Called by the Surgeon General, Public Health Service
Under Section 8 of Public Law 84-660

Public Health Service,
U. S. Department of Health, Education, and Welfare
Idaho Department of Health
Utah Water Pollution Control Board
Wyoming State Department of Public Health

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Logan, Utah . . . . July 19, 1960

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Conference on Pollution of the Interstate Waters of the Bear River, Second Session

Utah State University
Logan, Utah
July 19, 1960

Chairman:

Mr. Murray Stein
Chief, Enforcement Branch
Division of Water Supply and Pollution Control
U. S. Public Health Service
Washington, D. C.

Conferees:

Mr. Kaarlo W. Nasi
Regional Program Director, Region VIII
Division of Water Supply and Pollution Control
U. S. Public Health Service
Denver, Colorado

Mr. Vaughn Anderson
Chief, Engineering and Sanitation Section
Idaho Department of Health
Boise, Idaho

Mr. Lynn M. Thatcher
Executive Secretary
Utah Water Pollution Control Board
Salt Lake City, Utah

Mr. David P. Green
Engineer-in-Charge, Water Pollution Control
Wyoming State Department of Public Health
Cheyenne, Wyoming

OTHER APPEARANCES

U. S. Public Health Service:

Mr. F. W. Kittrell
In Charge, Pollution Evaluation
Field Operations Section
Technical Services Branch, WS&PC
Sanitary Engineering Center
Cincinnati, Ohio

Other Appearances: (Continued)

U. S. Department of the Interior:

Mr. Dean E. Bischoff
Logan Development Office
Bureau of Reclamation
Logan, Utah

U. S. Fish and Wildlife Service:

Mr. Vanez T. Wilson
Manager, Bear River Migratory Bird Refuge
Brigham City, Utah

State of Idaho:

Mr. Mark D. Hammond
City Councilman
Preston, Idaho

State of Utah:

Congressman Henry A. Dixon
Ogden, Utah

Mr. Grant W. Midgley
Legislative Assistant to
Senator Frank E. Moss

Dr. Vaughn E. Hansen
Director, Engineering Experiment Station
Utah State University
Logan, Utah

Mr. Merrill Petersen
Cache Chamber of Commerce
Logan, Utah

Mr. George A. Preston
Cache Chamber of Commerce
Logan, Utah

State of Wyoming:

Mr. S. A. Christiansen
Member, Wyoming Stream Pollution Control
Advisory Council
Evanston, Wyoming

Other Appearances: (Continued)

Amalgamated Sugar Company:

Mr. R. H. Cottrell
Ogden, Utah

Mr. Sylvester M. Heiner
Ogden, Utah

California Packing Corporation:

Mr. W. C. Hageman
Ogden, Utah

Utah-Idaho Sugar Company:

Mr. Robert S. Gaddie
Salt Lake City, Utah

OBSERVERS

Mr. Seth Gordon
Member, Water Pollution Control Advisory Board
Sacramento, California

Mr. Frank E. Long
Member, Water Pollution Control Advisory Board
Buffalo, Wyoming

Mr. John S. Samson
Member, Water Pollution Control Advisory Board
Omaha, Nebraska

Mr. Blucher A. Poole, Technical Secretary
Indiana Stream Pollution Control Board
Indianapolis, Indiana

Mr. James R. Harlan
Division of Water Supply and Pollution Control
U. S. Public Health Service
Washington, D. C.

Public Health Service Consultant:

Mr. Aleck Alexander, Director
Arkansas-White-Red River Basins Water Quality
Conservation Project
U. S. Public Health Service
Dallas, Texas

(A complete Attendance Roster is attached, as "Appendix A")

The conference met, pursuant to notice, at 9:30 A.M., July 19, 1960, at Utah State University, Logan, Utah, Mr. Murray Stein, Chairman, presiding.

MR. STEIN: The conference is open.

This Second Session of the conference in the matter of the pollution of the interstate waters of the Bear River, involving the States of Idaho, Utah and Wyoming, is being held under provisions of Section 8 of the Federal Water Pollution Control Act. Under the provisions of that Act, the Surgeon General of the Public Health Service is required to call a conference of this type when requested to do so by a State water pollution control agency. This conference was initiated in response to such a request from the Utah Water Pollution Control Board.

The purpose of this conference is to bring together the State and local water pollution control agencies, the Public Health Service, and other interested parties to review the existing situation, the progress which has been made, and to lay a basis for future action by all parties concerned; and to give the States, localities, and industries an opportunity to take any remedial action which may be indicated under State and local law.

The conference technique is a rather old and effective one. It has proved its effectiveness by continuous informal application by the States in the ordinary process of their business in water pollution control and in allied fields.

Under our Act, there are three stages to a Federal enforcement procedure. The first is a conference, such as this. If a satisfactory solution is not achieved, the second stage is a public hearing. The third stage, if necessary, is court action.

Under the Federal Law this is a conference between official agencies representing the three States and the Public Health Service. The official agencies are privileged to bring whomever they wish to the conference and have them participate in the conference. The conferees have been designated by these official agencies. For Utah, the conferee is Mr. Lynn M. Thatcher, Executive Secretary,Utah Water Pollution Control Board. For Wyoming, the conferee is Mr. David P. Green, Engineer-in-Charge, Water Pollution Control, Wyoming State Department of Public Health. For Idaho, the conferee is Mr. Vaughn Anderson, Chief, Engineering and Sanitation Section, Idaho Department of Health. Representing the Public Health Service as conferee is Mr. Kaarlo W. Nasi, Regional Program Director for Water Supply and Pollution Control, with headquarters in Denver, Colorado. My name is Murray Stein, and I am from Public Health Service Headquarters in Washington, D. C.

Both the States and the Federal government have responsibilities in dealing with interstate water pollution control problems. The Federal Water Pollution Control Act declares that the States have primary rights and responsibilities for taking action to abate and control interstate pollution. It has always been the policy of the Public Health Service to recognize this traditional role of the States. The function of the Public Health Service is to encourage the States in this activity. However, the Public Health Service is charged by law with specific responsibility in connection with interstate pollution control problems. The Federal Water Pollution Control Act of 1956 provides that pollution of interstate waters, whether the matter causing or contributing to such pollution is discharged directly into such waters or reaches such waters after discharge into a tributary of such waters, which endangers the health or welfare of persons in a State other than that in which the discharge originates, shall be subject to abatement. This conference will be useful in providing a clear record of the problem, delineating the progress which has already been made, and indicating what still needs to be done in correcting the interstate pollution problem.

Under the Federal Law, the Surgeon General is required at the conclusion of the conference to prepare a summary of the conference which will be sent to all conferees. This summary report, according to law, must include three things: (1) occurrence of pollution of interstate waters subject to abatement under the Act; (2) adequacy of measures taken toward abatement of the pollution; and (3) nature of delays, if any, being encountered in the abatement of the pollution. It is suggested that the conference discussions be directed toward these points, so that we may prepare a serviceable summary.

In addition, the Law requires the Surgeon General, at the conclusion of the conference, to determine whether effective progress toward abatement of pollution, if such pollution exists, is being made. To aid the Surgeon General in making this determination, it is strongly suggested that the conferees agree on a schedule of remedial action, if such a schedule is appropriate. Such a time schedule, of course, should be realistic and reasonable. Once the time schedule is accepted by the conferees it should be pointed out that it is primarily a function of the States to see that the schedule is adhered to.

As has been pointed out, this is the Second Session of the Conference. At the First Session, the conferees unanimously made the following conclusions and recommendations, and I would like to summarize them very briefly:

1. That the Bear River is an interstate stream within the meaning of the Federal Water Pollution Control Act.

2. That the Bear River, as it flows back and forth from

Wyoming and Utah in the Evanston area, may present a potential minor pollution problem.

3. That the Wyoming State Department of Public Health will undertake a re-evaluation of this problem, and if a pollution situation which merits attention is found, the Wyoming authorities will promptly institute a program of appropriate remedial action.

4. That pollution of interstate waters subject to abatement under the Federal Water Pollution Control Act is occurring in the Bear River and its tributary, the Cub River, as they flow from Idaho to Utah. Municipal and industrial wastes from Preston, Idaho, the Franklin Sugar Company at Whitney, Idaho, the California Packing Company at Franklin, Idaho, are finding their way into the waters of the Bear River; and combine with waste from the Amalgamated Sugar Company at Lewiston, Utah, the Cache Valley Creamery at Lewiston, Utah, the Community of Lewiston, Utah, the Sego Milk Company at Richmond, Utah, the California Packing Company and the Rocky Mountain Dairy Company at Smithfield, Utah, the California Packing Company, E. A. Miller Packing Company, L. L. Miller Packing Company, and the Morning Milk Company at Wellsville, Utah, the Community of Wellsville, Utah, and the City of Logan, Utah, which are also finding their way into the waters of the Bear River.

(This is not a part of the summary of the First Session, but I think the Second Session might direct its attention to determining whether Worm Creek also is not an interstate stream which should be included in this description.)

5. That such discharges from Idaho contribute to the pollution of the Bear River so as to endanger the health and welfare of persons in Utah, a State other than that in which the discharges originate. The effects of this pollution are:

   A. Deterioration of water quality used for irrigation and stock-watering so as to cause a potential health hazard.

   B. Deterioration of water quality so as to interfere with aquatic life and fishlife.

   C. Deterioration of water quality so as to interfere with the Cache River Basin area as a recreational area.

D. Deterioration of the river so as to make it unsuitable as a potential source of public water supply.

6. The State of Utah, with the advice and assistance of the Public Health Service, is to gather information and data which will permit the State of Utah to classify the waters of the Bear River under the Utah State Law. At the conclusion of this process, we would propose to reconvene.

The studies and data gathering processes have been completed, but I do not think the classification has been completed by Utah. We will hear from Utah on that matter subsequently.

Now, a word about the procedure. Mrs. Mary Stogsdill, of the Public Health Service, is making a stenographic report of these proceedings for the purpose of aiding us in preparing a summary, and also providing a record of what is said and done here. We will make copies of the summary and the transcript available to the conferees; that is, the State agencies, at the conclusion of the conference. Other people desiring copies of the summary and the transcript should contact their official State water pollution control agency and request such copies.

We have prepared an agenda for the conference, and the agenda in abbreviated form can be seen on the blackboard. The agenda is to aid us in directing our discussion toward the points required by law to be covered in the summary. However, the agenda can be adjusted at any time to meet particular situations as they arise. All conferees; that is, representatives of the States and the Public Health Service, will be called on to make statements. The conferees, in addition, may call on the participants they have invited to the conference to make statements. At the conclusion of such statements, the conferees will be given an opportunity to comment or ask questions; and at the conclusion of their questions or comments, I may get into the procedure too. This method has proved effective in developing a clear statement of the problem, and reaching agreements on equitable solutions.

Before we begin calling on the conferees for their statements, I should like to take the opportunity to call on a man who has devoted much of his interest to water pollution control. He is the former President of Utah State University, a member of the Cache Valley Chamber of Commerce, and groups interested in dealing with this pollution control problem; a distinguished member of Congress who has announced he will not run for Congress again for the next Session of Congress. I would like to call at this time on Congressman Henry Dixon. May I point out that all participants from the audience are asked to use the microphone which Congressman Dixon is now using. Congressman Dixon --

CONGRESSMAN DIXON: Chairman Stein, and dear friends. This occasion is extremely important to us in Utah. I have been a member of the Cache Valley Chamber of Commerce for some eight years now. I know how close to the hearts of the people water pollution is. We have flowing past this beautiful University the Logan River, which flows as high as eight hundred second feet. The river is as clear as crystal, and as cold as ice water. It represents possibly one of the best examples of reforestation and conservation in the west, because people from all over the world come here to see the miracles that our Department of Forestry have wrought along this river.

Much to our surprise, we find that even our pure, beautiful Logan River is being polluted. Our Chamber of Commerce took motion pictures (which I have seen) about four years ago, showing how this beautiful stream is being polluted. We find that the detergents going into our water here are destroying the fish. We don't know exactly why, but they smother. Just below here the Logan River runs into the Bear River,and the Bear River runs into the second largest game preserve in the United States -- the Migratory Fowl Refuge, we call it. We don't know what effect the detergents are having on the migratory fowl. We know there is tremendous death from botulism,but not as bad as it used to be. I can remember when all along our lake and sloughs there were ricks of dead ducks that were terrible, and the stench certainly should not be tolerated, let alone the loss of life. We have a treaty with Canada and also with Mexico with regard to this great Migratory Fowl Refuge, and we certainly can't have the water running into that refuge polluted. Now that we have the dikes all around this 64,000 acres, with the water rather deep, and fresh water, we don't have nearly the number of deaths among the migratory fowl from botulism.

This just gives a little illustration of the concern that this lovely, high, mountain-valley community has for its streams. I compliment the Cache Valley Chamber of Commerce on its initiative, and also the Utah State Board of Health on its initiative in trying to stop this pollution from communities and industries -- and it must stop. I commend the idea of this conference. I attended the one two years ago on getting representatives from other States that are concerned, because this is an interstate stream. It is the largest stream, I think, in the United States that does not reach the ocean, and it is tremendously important.

Our purposes here are first to find out what causes the pollution; second, whether or not we can get the offenders to voluntarily stop polluting our streams; third, how they can go about it to stop polluting our streams; and fourth, if they can't do it voluntarily, then what action must be taken to get them to check it. We have to stop it; there is no question about that. But we don't know, first, what our problems are; and second, how to solve them. I have been talking with a fine scientist from Utah State University here, and we agree that this conference can do much toward getting to work to see what we can do locally too, toward the solution of the problems. The Government can't do everything, and it is inspiring to see the localities taking such a vital interest to check this pollution of our wonderful streams. Then too, when it comes to money, no one has even an idea as to how much this costs. It could go into billions and billions of dollars, but I am glad to see a fine start begin out here in my wonderful State of Utah, and I am proud of all you fine people who are taking part -- you who are conferees, and Mr. Stein, and our Government for showing the leadership. I thank you kindly for this opportunity, and wish you Godspeed in this great program.

(Applause)

MR. STEIN: Now to show the nonpartisan aspect of pollution control, we also have a representative of Senator Frank E. Moss of Utah, who has long been interested, and actively so, in pollution control, both in Utah and on the Federal level. At this time I would like to call on Mr. Grant Midgley, representative of Senator Moss.

MR. MIDGLEY: I am Grant W. Midgley, Legislative Assistant to Senator Frank E. Moss. I am here representing Senator Moss, who deeply regrets that he cannot be here personally. He is on his way back by car from Los Angeles, where he attended the Democratic National Convention and post-convention meetings.

Senator Moss has been following the Bear River pollution problem with great interest for many months -- in fact, from the time of your first conference in the fall of 1958. He has had extensive correspondence with Mr. Merrill Petersen, Chairman of the Sanitation Committee of the Cache County Chamber of Commerce, and other local civic leaders who are leading the abatement campaign.

The Senator sends his congratulations to these citizens and organizations of Cache County who have exerted such strong leadership in the fight to abate pollution of the Bear River. This is the type of leadership we must have -- local, state and national -- if we are to do this job.

As Mr. Stein knows, Senator Moss and members of his staff have been in touch with the Surgeon General and other officials of the U. S. Public Health Service many times, to urge that the Bear River program be pushed with all possible speed. He was deeply concerned about the delay in the program.

After the October 8, 1958 conference, the Public Health Service ordered the Utah State Water Pollution Control Board to gather information and data which would permit the State of Utah to classify the waters. This was to take no longer than one year from the conference date, and the classification was to be made three months after that. The State Board asked that this three-month period be extended by six months. Logan objected to this extension, and Senator Moss urged the Surgeon General to "forestall further delay". Despite this, however, a three-months' extension was granted, in place of the six requested.

The Senator is as gratified as all of you here that this conference marks the end of this delay of the data-gathering and classification period of the Bear River pollution abatement program, and that we are now ready to establish a time schedule for the remedial measures which both Utah and Idaho will take to clear the river.

Water pollution abatement is a problem which is concerning localities and states throughout the length and breadth of the nation. A close example is Utah's unique inland sea, the Great Salt Lake. For years, communities and industries there have taken what seemed the cheapest and safest way out of their sanitation problems by using the lake as the dumping ground for their municipal sewage and industrial waste. The amount of sewage and waste has increased to the extent that even the volume and high salt content of the waters of the Great Salt Lake cannot control it, and the eastern shore of the lake has become a stinking and dangerous cesspool. It is hoped that public hearings on Senator Moss's Great Salt Lake National Park Bill, to be held in Utah in November, will mark the beginning of the development of a program to correct this situation.

Because of two of his committee assignments, the Senator has been in close touch with water pollution legislation, as well as the question of the nation's over-all water needs.

He is a member of the Senate Select Committee on National Water Resources, which is preparing a report on the nation's projected water requirements and resources for the years ahead. As this audience is aware, in no other area of our nation is development and protection of adequate water resources of greater importance than right here in Utah. And pollution abatement is an ever present problem in the maintenance of proper water supply.

One question that we must face realistically is the role of the Federal Government and the Federal financial contribution to pollution abatement programs. As you may know, Senator Moss has been in the forefront of the Congressional drive to strengthen Federal water pollution control laws, and to increase the amount of Federal money available for assisting localities to build sewage treatment plants.

He is a member of the Senate Committee on Public Works, which last year considered and reported the Water Pollution Control Act, H.R. 3610, which provided for increased Federal grants to match local funds for construction of sewage treatment plants.

This year, the bill was passed by both houses of Congress, but was lost when vetoed by the President.

During the debate, Senator Moss pointed out that for forty years we have been dumping more pollution in the surface waters of the nation than we have been removing through sewage treatment, and that we must not lose what momentum we have gained in removing it.

The Senator wished me to emphasize that he is always ready to work with the citizens of Cache County and of all other areas of the state to assist in solving this problem of pollution.

I greatly appreciate this opportunity of making this statement on behalf of Senator Moss.

(Applause)

MR. STEIN: We have with us three distinguished members of the President's Water Pollution Control Advisory Board, whom I would like to introduce at this time. I think I will do that from the back of the auditorium toward the front. First, Mr. Seth Gordon, of California. Would you stand up, Mr. Gordon? Mr. John Samson, of Nebraska. Mr. Frank Long, of Wyoming.

In addition, I would like to introduce the Executive Secretary of the Indiana Water Pollution Control Board, and one of the most distinguished figures nationally and internationally in the field of water pollution control administration -- Mr. Blucher A. Poole, of Indianapolis, Indiana.

I would like to make an announcement or two before we proceed. We will have a coffee break sometime after 10:30 when we find a convenient time. We will have to take a luncheon break about 12:30, to meet the schedule of the school cafeteria. With that, we will call on Mr. Kaarlo W. Nasi, the representative for the Public Health Service.

MR. NASI: Thank you very much, Mr. Stein. The interstate pollution problem under consideration today is one with which the States here represented in the conference and the Public Health Service have been concerned for a number of years. This has been made apparent by the statements you have heard so far. Cooperatively, the Division of Water Supply and Pollution Control of the Public Health Service, and the State water pollution control agencies have carried out a number of investigations and studies to assess the problem and the abatement needs. At the First Session of the Conference, held here in October 1958, a statement on the Bear River problem based on these studies was presented by Mr. Aleck Alexander, of the Public Health Service. Mr. Alexander is now stationed at Dallas, Texas, with the Public Health Service as Director of the Arkansas-White-Red River Basins Water Quality Conservation Project -- the project he calls the "salt project", but we are very fortunate in having him here with us today as a consultant with the Public Health Service.

Since that first session, further studies have been made by the State of Utah and the Public Health Service. We should like to present at this time, Mr. Chairman, with the concurrence of the State Conferees, a summary statement on the total problem as of this date, based on these and past studies. Mr. F. W. Kittrell, Sanitary Engineer in Charge of Water Pollution Evaluation in the Technical Services Branch of the Public Health Service located at the Sanitary Engineering Center in Cincinnati, is here to present this statement.

MR. STEIN: Mr. Kittrell, would you come up to the platform, please?

MR. KITTRELL: During the November-December, 1955 study, the seasonally operated Franklin County Sugar Company plant at Whitney, Idaho, and the Amalgamated Sugar Company plant at Lewiston, Utah, were in operation. The California Packing Company plants at Franklin, Idaho and Smithfield, Utah were closed for the winter.

Since that time, additional information on effects of wastes on water quality has been obtained. The Utah Water Pollution Control Board made a study of streams of the Bear River Basin in Utah during the period of July, 1958 through September, 1959. Selected data from this study have been used to supplement the evaluation of water quality data which was presented at the First Session of the Conference.

At the time of the First Session, the Utah Water Pollution Control Board had not classified the streams that are involved. Since then, the Board has taken preliminary action to classify the streams, and it is anticipated that final action on classification will be taken subsequent to this session. In this statement, data on water quality in Utah in the river reaches under consideration are compared with standards for certain constituents covered by the preliminary classifications established by the Board. The preliminary classifications are:

Bear River:

State Line to Cutler Dam	Class C

Below Cutler Dam to Malad River	Class C_1
Upper River in vicinity of Wyoming-Utah State Line	Class C

MR. STEIN: Mr. Kittrell, do you think you ought to point out the Cutler Dam and the Malad River on the big map, to orient the people here?

MR. KITTRELL: Yes. Our chart stops right here. This is Cutler Reservoir and Dam. The Bear River flows south from the Cutler Reservoir and is joined by the Malad River, which rises in Utah and comes into the Bear River below Garland, Utah. The upper Bear River in the vicinity of the Wyoming-Utah state line in Utah is Class C, to repeat.

__Cub River__:

State Line to Mouth	Class D

__Worm Creek__:

State Line to Mouth	Class D

__Malad River__:

State Line to Garland, Utah	Class C_1

THE AREA

The principal river reaches involved are shown in Figure 1. They are:

1. The Bear River from a point west of Preston, Idaho, to just below Cutler Reservoir in Utah.
2. The Cub River from a point southwest of Franklin, Idaho, to its junction with the Bear River southwest of Richmond, Utah.
3. Worm Creek from a point southeast of Preston, Idaho, to its junction with the Cub River just south of the Idaho-Utah state line.

Both domestic sewage and industrial wastes are discharged to the stream reaches involved. The principal industrial wastes are produced in the manufacture of beet sugar, dairy products, and vegetable processing.

Uses of the waters of these stream reaches include: irrigation and stock-watering; recreation, including fishing; and aquatic life and wildlife habitat.

In addition to the principal stream reaches discussed above, consideration has been given to a portion of the Bear River from above Evanston,Wyoming to the Utah state line. In this stream reach, the only source of pollution is Evanston, from which sewage and industrial wastes are discharged to the Bear River.

SOURCES OF WASTES

Characterists of wastes discharged to the streams of the Lower Bear River Basin in the vicinity of the Idaho-Utah state line are listed in Table 1. Because of the seasonal nature of the beet sugar and vegetable canning operations,the waste characteristics are given for two periods of the year; November-December, and July through September. The two periods were selected to coincide with both seasonal industrial operations and the stream data used for evaluation of water quality. The beet sugar plants operate during the November-December period,and the canning plants during the July through September period. Municipal sewage and milk wastes are discharged during both periods.

SEWERED POPULATION EQUIVALENTS

Figure 1 shows the sources of bacterial contamination in terms of sewered population equivalents discharged to the streams during the November-December and the July through September periods. The term "sewered population equivalents", rather than "sewered population" is used to cover the estimated 50% reduction in bacterial contamination accomplished by the Preston, Idaho primary sewage treatment plant, which serves a population of 4,000. Even with this allowance, the Preston sewage treatment plant effluent, with a sewered population equivalent of 2,000, accounts for about 70% of the sewage bacterial contamination of the streams of the area. Untreated sewage from Lewiston, Utah is the second largest source, with about 17% of the total. The remainder of the sewage bacterial contamination has its source in untreated sewage from the employees of industrial plants. The slight difference between the 2,812 sewered population equivalent for November-December, and that of 2,957 for July through September is attributable to the seasonal operation of the beet sugar and the vegetable canning plants, with the accompanying variations in employees contributing sewage.

B.O.D. POPULATION EQUIVALENTS

The B.O.D. population equivalents of the sources of organic wastes are shown in Figure 2. The high organic load reflected by a total PE of 614,250 during November-December is the result of the

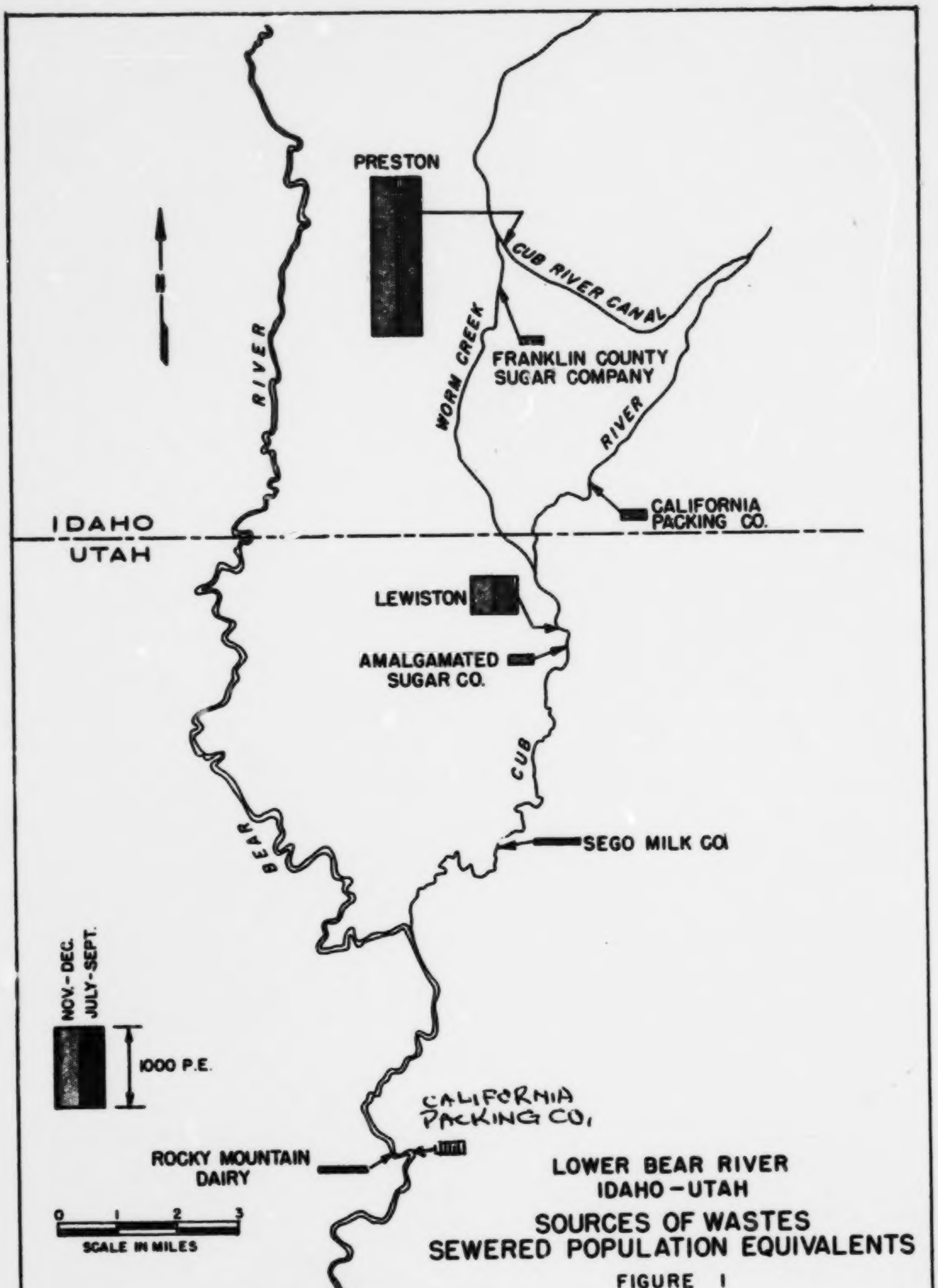
TABLE 1

Lower Bear River, Idaho-Utah
Characteristics of Wastes Discharged to Streams

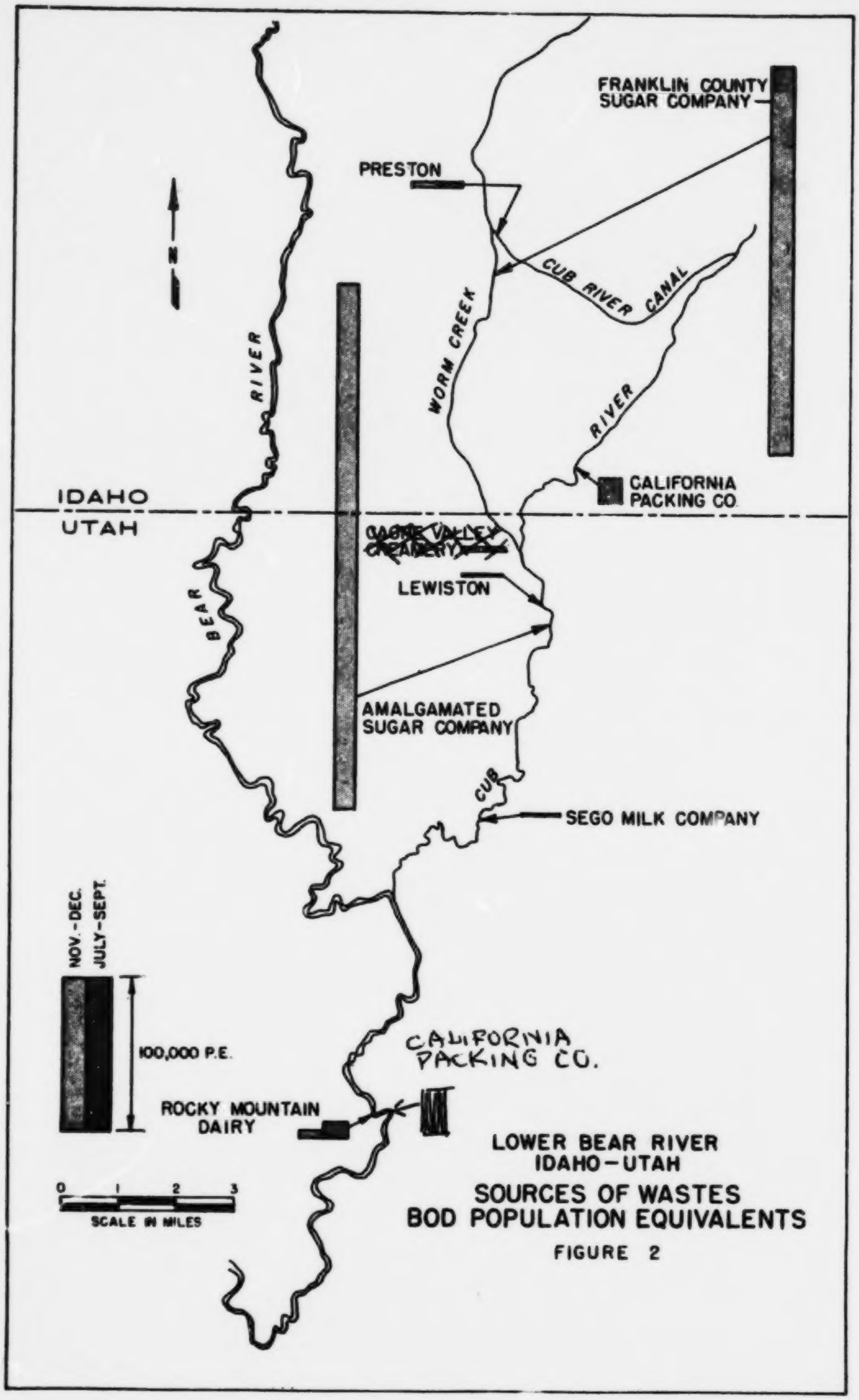
Source	Sewered PE				BOD PE				Susp. Solids PE			
	Nov.-Dec.		July-Sept.		Nov.-Dec.		July-Sept.		Nov.-Dec.		July-Sept.	
	PE	%	PE	%	PE	%	PE	%	PE	%	PE	%
Preston, Idaho Sewg.	2,000	71.13	2,000	67.64	3,000	0.49	3,000	4.32	2,600	0.14	2,600	18.84
Whitney, Idaho												
Franklin Co.Sugar Co.	85	3.02	-	-	258,000	42.03	-	-	1,258,000	66.62	-	-
Franklin, Idaho												
Calif. Packing Co.	*	*	150	5.07	*	*	17,800	25.65	*	*	*	*
Lewiston, Utah, Sewg.	500	17.78	500	16.91	500	0.08	500	0.72	500	0.03	500	3.62
Amalg. Sugar Co.	120	4.27	-	-	346,000	56.30			621,000	32.89	-	-
Richmond, Utah												
Sego Milk Co.	42	1.49	42	1.42	600	0.10	600	0.86	1,600	0.08	1,600	11.60
Smithfield, Utah												
Rky.Mtn.Dry.Prod.Co.	65	2.31	65	2.20	6,150	1.00	12,300	17.73	4,550	0.24	9,100	65.94
Cal. Pack. Co.	-	-	200	6.76	-	-	35,200	50.72	-	-	*	*
	2,812		2,957		614,250		69,400		1,888,250		13,800	

* No value available.

These data are depicted in Figures 1 through 3.


PRESTON
CUB RIVER CANAL
WORM CREEK
FRANKLIN COUNTY SUGAR COMPANY
RIVER
CALIFORNIA PACKING CO.
IDAHO
UTAH
LEWISTON
AMALGAMATED SUGAR CO.
CUB
SEGO MILK CO.
BEAR
RIVER
NOV.-DEC.
JULY-SEPT.
1000 P.E.
CALIFORNIA PACKING CO.
ROCKY MOUNTAIN DAIRY
0 1 2 3
SCALE IN MILES

LOWER BEAR RIVER
IDAHO-UTAH
SOURCES OF WASTES
SEWERED POPULATION EQUIVALENTS
FIGURE 1


FRANKLIN COUNTY SUGAR COMPANY
PRESTON
N
CUB RIVER CANAL
WORM CREEK
RIVER
BEAR
RIVER
IDAHO
UTAH
CALIFORNIA PACKING CO.
~~CACHE VALLEY CREAMERY~~
LEWISTON
AMALGAMATED SUGAR COMPANY
CUB
SEGO MILK COMPANY
NOV.-DEC.
JULY-SEPT.
100,000 P.E.
CALIFORNIA PACKING CO.
ROCKY MOUNTAIN DAIRY
0
1
2
3
SCALE IN MILES

LOWER BEAR RIVER
IDAHO-UTAH
SOURCES OF WASTES
BOD POPULATION EQUIVALENTS
FIGURE 2

14.C

sugar beet plant operations. Of this, 258,000 PE, or 42% of the total, are discharged from the Franklin County Sugar Company plant at Whitney, Idaho, and 346,000 PE, or 56.3%, are from the Amalgamated Sugar Company plant at Lewiston, Utah. The California Packing Company plant at Franklin, Idaho is reported recently to have started processing cabbage during winter, and now contributes to the organic pollution in winter. No quantitative data are available, however, on this source of waste during winter. The Rocky Mountain Dairy Products Company accounts for 6,150 PE, or 1.0%, of the total; Preston sewage for 3,000 PE, or about 0.5%; the Sego Milk Company at Richmond, Utah, contributes 600 PE, or 0.1% of the total; and sewage from Lewiston accounts for 500 PE, or a little less than 0.1% of the total.

During July-September, the total PE is 69,400, of which the California Packing Company at Smithfield, Utah contributes 35,200, or about one-half the total from all sources. This company's plant at Franklin, Idaho adds 17,800 PE, or about one-fourth of the total. The Rocky Mountain Dairy Products Company accounts for 12,300 PE, or nearly one-fifth of the total. The PE of wastes from Preston, Sego Milk Company, and Lewiston remain the same as in November-December, but their percentages of the total increase because of the lower July - September total, to about 4.3, 0.9, and 0.7 per cent respectively.

MR. STEIN: Mr. Kittrell, just for purposes of the record, I would like to call your attention to your reference to discharges of the California Packing Company at Franklin, Idaho, which you said contributed 17,800. How much of the total is that?

MR. KITTRELL: That is about one-fourth of the total.

MR. STEIN: Thank you.

MR. KITTRELL: To continue with the report --

SUSPENDED SOLIDS POPULATION EQUIVALENTS

Figure 3 depicts the suspended solids from the sources of wastes. The total PE from all sources in November-December is 1,888,000, of which the Franklin County Sugar Company contributes 1,258,000, or a little less than two-thirds of the total, and the Amalgamated Sugar Company contributes almost one-third of the total. The other four sources, Preston and Lewiston sewage, and the Sego Milk Company and Rocky Mountain Dairy Products plants combined, produce one-half of one per cent of the total during November-December. Here again, data are not available on the winter contribution of the California Packing Company cabbage processing operation at Franklin, Idaho.

During the July-September period, the suspended solids PE from sources of wastes on which data are available drops to 13,800. Of this, the Rocky Mountain Dairy Products Company is the largest contributor, with 9,100 PE, or 66% of the total. Preston sewage accounts for 18.8%, Sego Milk Company for 11.6%, and Lewiston sewage for 3.6%. Data are not available for the two California Packing Company plants.

MR. STEIN: Mr. Kittrell, may I interrupt you here? I think we have gotten through most of the technical part of the survey. These arrangements catch up with us. We started a little late, but we do have arrangements for a coffee break at the back of the auditorium. The people are here now. I suggest we take advantage of it. I understand, although I am assured it is nominal, there will be a charge. There is coffee, at the back of the auditorium.

(Ten minute break)

MR. STEIN: May we reconvene, please? The conference is again declared to be in session. Mr. Kittrell, will you please resume your report?

MR. KITTRELL: Our report will continue with the results of surveys.

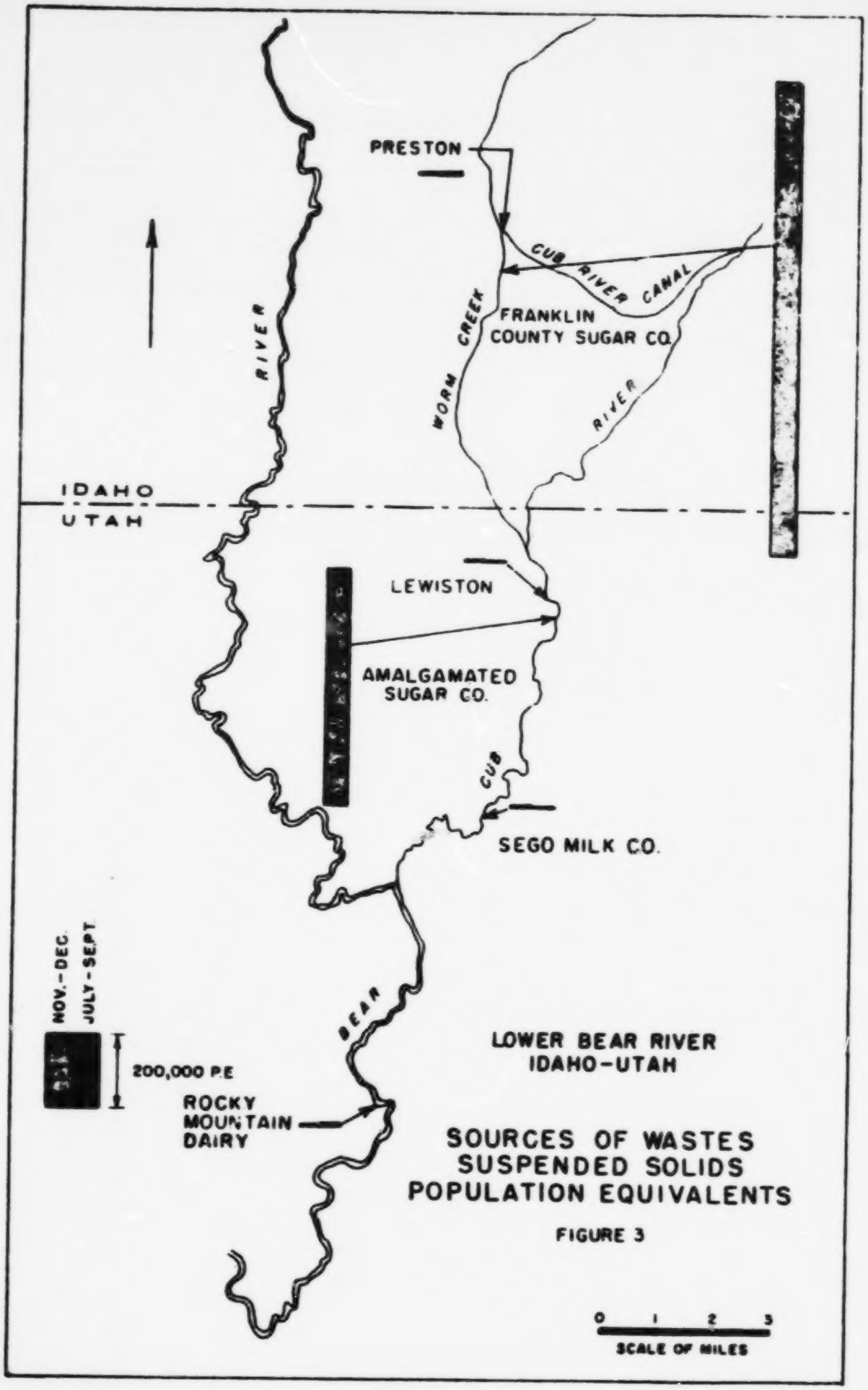
Mean values for coliform bacteria, B.O.D. and suspended solids found in the streams during November-December 1955, while the beet sugar plants were in operation, are given in Table 2. This table also includes mean values for coliform bacteria and B.O.D. for July through September, 1959. Suspended solids were not determined in the streams during the latter survey, and all sampling was limited to the portions of the stream reaches that lie in Utah.

Figures 4 through 7 show the stream data on coliform bacteria and B.O.D. for the two periods as bars, proportioned to the concentrations of the constituents. These charts include, for comparison, bars representing the standards for coliform bacteria and for B.O.D. in Utah.

COLIFORM BACTERIA

The basic standard for MPN of coliform bacteria for Classes C, C_1, and D waters is an average of 5,000 per 100 ml.

Figure 4 shows the median coliform MPN for the November-December period. On Worm Creek, above all known sources of sewage pollution, the coliform MPN was 15,000 per 100 ml. On the Cub River Canal, above all known sources of sewage pollution, the coliform MPN was 2,300 per 100 ml.


PRESTON
CUB RIVER CANAL
WORM CREEK
FRANKLIN COUNTY SUGAR CO.
CUB RIVER
BEAR RIVER
IDAHO
UTAH
LEWISTON
AMALGAMATED SUGAR CO.
SEGO MILK CO.
ROCKY MOUNTAIN DAIRY
NOV.-DEC.
JULY-SEPT.
200,000 P.E
0 1 2 3
SCALE OF MILES

LOWER BEAR RIVER
IDAHO-UTAH

SOURCES OF WASTES
SUSPENDED SOLIDS
POPULATION EQUIVALENTS

FIGURE 3

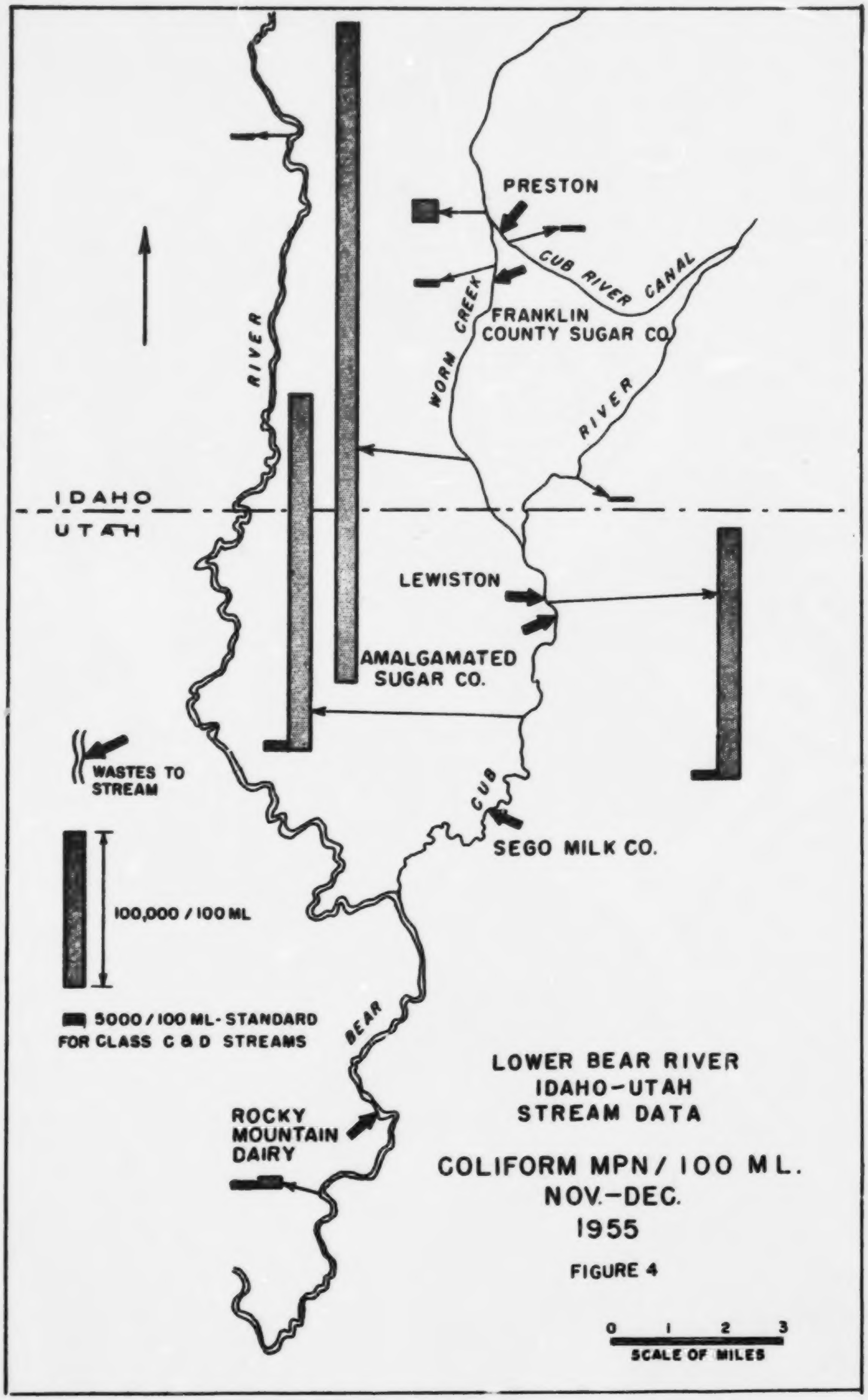
TABLE 2

Lower Bear River, Idaho-Utah
Results of Stream Analyses

	Station			November - December, 1955				July - September, 1959		
Stream	USPHS(1)	UWPCB(2)		Flow cfs	Coliform MPN/100ml.	BOD mg/1.	Sus.Sol. mg/1.	Flow cfs	Colif. MPN/100ml.	BOD mg/1.
Worm Creek	H		Above Preston, Idaho	3.1	15,000	2.21	114			
Cub R. Canal	I		Above Preston Sewage	13.4	2,300	0.72	7			
Worm Creek	J		Below Preston & Cub R.Canal	10.1	4,300	2.81	40.1			
Worm Creek	K		Below Franklin Co.Sugar Co. & above State Line	20.0	430,000	264.00	543.0			
Cub River	L		Abv.St.Line-Blw.Calif.Pk.Co.	9.6	330	0.8	9.2			
" "	M	16	Blw.St.Line-Abv.Amalg.Sgr.	32.9	163,000	162.	111.	7	6,600	5.5
" "	N	22	Blw.Amalg. Sugar Co.	56.2	230,000	309.	24.2	15	1,020	2.45
" "		C30.1	Below Sego Milk Co.					17	2,300	-
" "		30	Above mouth					19	3,300	2.95
Bear River	G		Above State Line	316	93	1.20	20.7			
" "		13	Below State Line					591	930	2.3
" "		B32	Above Cub River						930	
" "		B23	Blw.Cub R.&Rky.Mtn.Dairy					611	2,300	3.5
" "	F	23	Blw.Cub R.& Rky.Mtn.Dairy	723	6,800	9.91	49.3			
" "	D	25	Blw.Cutler Reservoir	1170	9,300	8.90	7.6	157	330	2.4

(1) Station designations used in PHS 1955 Study

(2) Station designations used in UWPCB 1959 Study


PRESTON
CUB RIVER CANAL
WORM CREEK
FRANKLIN COUNTY SUGAR CO.
RIVER
RIVER
IDAHO
UTAH
LEWISTON
AMALGAMATED SUGAR CO.
WASTES TO STREAM
CUB
SEGO MILK CO.
100,000 / 100 ML
5000 / 100 ML - STANDARD FOR CLASS C & D STREAMS
BEAR
ROCKY MOUNTAIN DAIRY
0
1
2
3
SCALE OF MILES

LOWER BEAR RIVER
IDAHO-UTAH
STREAM DATA

COLIFORM MPN/ 100 ML.
NOV.-DEC.
1955

FIGURE 4

Preston,Idaho sewage, from the town's primary treatment plant, is discharged to the Cub River Canal a few feet above the canal's confluence with Worm Creek. The first station on Worm Creek below the entrance of Preston sewage yielded a median MPN of 4,500 per 100 ml. This does not reflect the full effect of the sewage, since the sampling station was too close below the point at which sewage entered to allow time for the complete multiplication of bacteria in the stream.

At the next station downstream on Worm Creek,which is below the waste discharge of the Franklin County Sugar Company,the MPN was 430,000 per 100 ml.Although the beet sugar wastes may have contributed a portion of the coliform bacteria at this station, the total coliforms actually were very close to the total that would be expected from the treated sewage of Preston plus the raw sewage from the employees of the Franklin County Sugar Company plant.

Worm Creek joins Cub River a short distance below the Idaho-Utah state line. On the Cub River in Idaho a short distance above the state line, the coliform MPN was 330 per 100 ml.

On the Cub River in Utah below its confluence with Worm Creek, the MPN was 163,000 per 100 ml., or thirty-three times the standard for Class D streams.

At the next downstream station on the Cub River, below the entrance of the Amalgamated Sugar Company wastes, the MPN increased to 230,000 per 100 ml., or forty-six times the standard. Consideration of the total number of coliform bacteria at this station indicates that the Amalgamated Sugar Company wastes contributed an important portion of the bacteria, since the total cannot be accounted for by upstream sewage alone. A few miles below this station the Cub River receives wastes from the Sego Milk Company, and in another few miles the Cub joins the Bear River.

On the Bear River in Idaho at a point west of Preston, the MPN was 93 per 100 ml. Several miles below the Idaho-Utah state line,the Cub River joins the Bear. Although there was no sampling station immediately below the confluence of these two rivers,it is estimated that the bacterial contamination carried by the Cub River increased the MPN of the Bear River by 10,000 to 15,000 per 100 ml., or two to three times the standard.

The next station downstream on the Bear River was below the Rocky Mountain Dairy Products Company plant. At this station the MPN was 6,800 per 100 ml., which is 36% above the standard. Sewage from the employees of the dairy probably did not account for more than 5% of the bacteria at this station.

The final station on the Bear River,just below Cutler Reservoir, does not appear on this chart.At this station the MPN was 9,300 per 100 ml., or nearly twice the standard for Class C_1 waters.

The coliform bacteria found during July-September, 1959, are shown on Figure 5. As noted previously, no samples were collected in Idaho during this period.

In Utah, the median MPN at one station exceeded the standard during this period. This was on the Cub River below the confluence with Worm Creek, where the MPN was 6,600 per 100 ml., or 33% greater than the standard. This reflects the effects of sewage from Preston and the employees of the California Packing Company at Franklin.

There are requirements of the coliform standards for Class D waters other than the simple average of 5,000 per 100 ml. These other requirements are based on the distribution of coliform results within a set of values. The standards state that not more than 20% of the samples collected during any month shall exceed 5,000 per 100 ml., and not more than 5% shall exceed 20,000 per 100 ml. These requirements were exceeded at the station on the Cub River below the entrance of Worm Creek, and also at the station on the Cub near its mouth, below the Sego Milk Company. Here, 33.3% of the MPN values during July-September exceeded 5,000 per 100 ml., and 16.7% exceeded 20,000 per 100 ml. The requirements also were exceeded on the Bear River below the confluence with the Cub, and below Rocky Mountain Dairy Products Company and the California Packing Company at Smithfield, Utah, where 33.3% of the MPN values exceeded 5,000 per 100 ml., and 16.7% exceeded 20,000 per 100 ml.

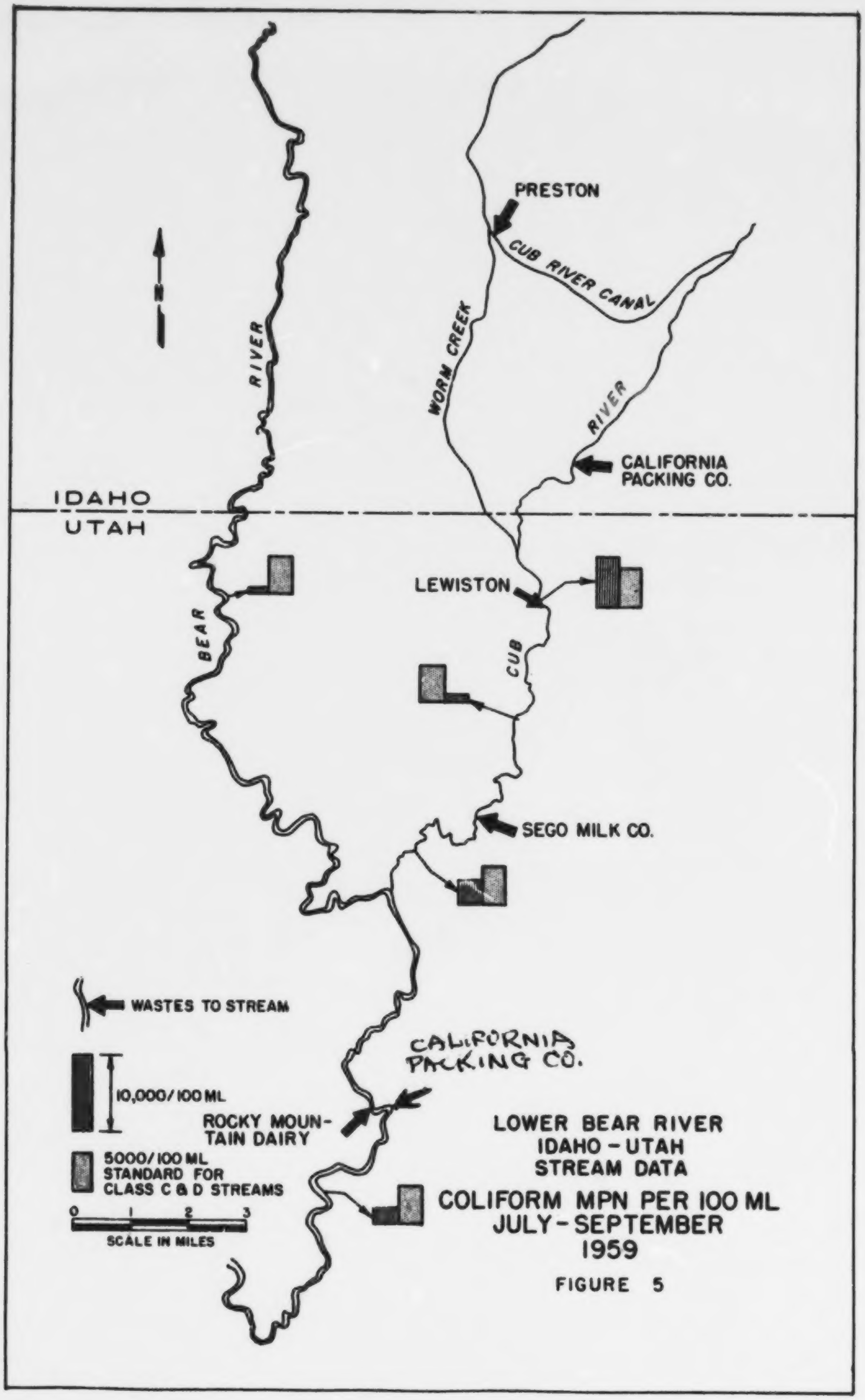
B.O.D. and Dissolved Oxygen

Figure 6 depicts the B.O.D. results in the streams during November-December. The basic B.O.D. standard for Classes C and C_1 waters is an average of 5 mg. per liter, and for Class D waters is an average of 25 mg. per liter.

On Worm Creek and the Cub River Canal, above the entrance of Preston sewage, the average B.O.D. was 2.21 and 0.72 mg. per liter, respectively. On Worm Creek below the Preston sewage discharge the B.O.D. was 2.81 mg. per liter. Below the Franklin County Sugar Company, but above the Idaho-Utah state line, the B.O.D. rose to 264 mg. per liter. On the Cub River above the state line the B.O.D. was 0.8 mg. per liter.

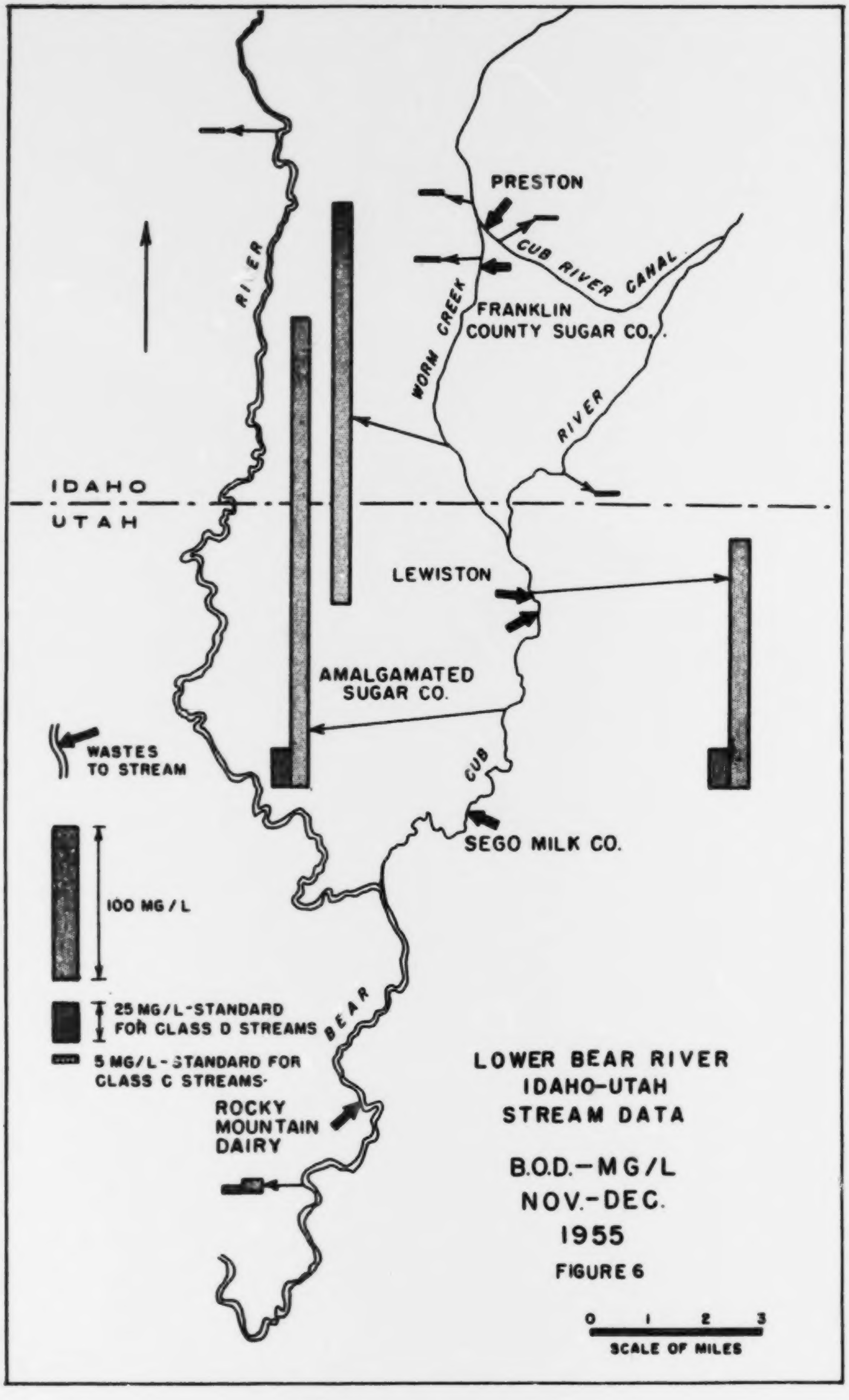
After the Cub received the flow from Worm Creek, but above the Amalgamated Sugar Company in Utah, the B.O.D. was 162 mg. per liter, or 6.5 times the Utah standard of 25 mg. per liter for a Class D stream. Below the Amalgamated Sugar Company the B.O.D. of the Cub rose to 309 mg. per liter, or 12.4 times the 25 mg. per liter standard.

The Bear River in Idaho had a B.O.D. of 1.20 mg. per liter. After receiving the flow of the Cub River, and below the Rocky Mountain Dairy


PRESTON
CUB RIVER CANAL
WORM CREEK
RIVER
CALIFORNIA PACKING CO.
N
RIVER
IDAHO
UTAH
BEAR
LEWISTON
CUB
SEGO MILK CO.
WASTES TO STREAM
10,000/100 ML
5000/100 ML STANDARD FOR CLASS C & D STREAMS
0
1
2
3
SCALE IN MILES
CALIFORNIA PACKING CO.
ROCKY MOUNTAIN DAIRY

LOWER BEAR RIVER
IDAHO - UTAH
STREAM DATA
COLIFORM MPN PER 100 ML
JULY - SEPTEMBER
1959

FIGURE 5


PRESTON
CUB RIVER CANAL
WORM CREEK
FRANKLIN COUNTY SUGAR CO.
RIVER
RIVER
IDAHO
UTAH
LEWISTON
AMALGAMATED SUGAR CO.
CUB
SEGO MILK CO.
BEAR
ROCKY MOUNTAIN DAIRY
WASTES TO STREAM
100 MG / L
25 MG / L - STANDARD FOR CLASS D STREAMS
5 MG / L - STANDARD FOR CLASS C STREAMS
0 1 2 3
SCALE OF MILES

LOWER BEAR RIVER
IDAHO-UTAH
STREAM DATA

B.O.D. – MG / L
NOV. - DEC.
1955

FIGURE 6

and California Packing Company at Smithfield, Utah, the B.O.D. of the Bear was 9.91 mg. per liter, or nearly twice the standard of 5 mg. per liter for a Class C stream. Below Cutler Reservoir the B.O.D. was 8.90 mg. per liter, which also is nearly twice the standard.

Figure 7 shows the B.O.D. results for July-September, 1959. None of the average B.O.D. values exceeded the standards during this period, the highest value being 5.5 mg. per liter on the Cub River just below the Idaho-Utah state line, and below Worm Creek and the California Packing Company at Franklin, Idaho. Although this did not exceed the B.O.D. standard, it should be noted that the dissolved oxygen at this station averaged only 2.1 mg. per liter, or 26% of saturation. During this period one dissolved oxygen value was as low as 0.5 mg. per liter, and three values ranged between 1.1 and 1.5 mg. per liter. While no quantitative dissolved oxygen limits are included in the Utah standards, the low dissolved oxygen values found indicate a condition which at times may deteriorate below even the Class E requirement that no nuisance resulting from a discharge of wastes shall be permitted. During periods of minimum stream flow, it is very probable that an odor nuisance occurs in the vicinity of this station on the Cub River.

Low dissolved oxygen values occurred at some stations during November-December, also. Worm Creek below the Franklin County Sugar Company, but above the state line, had an average dissolved oxygen of 3.18 mg. per liter, with two individual values less than 0.1 mg. per liter. The Cub River below the mouth of Worm Creek and below the state line averaged 3.60 mg. per liter, with one value of zero, and two others less than 1.0 mg. per liter. Cub River below the Amalgamated Sugar Company averaged 3.83 mg. per liter, with three individual values near 1.5 mg. per liter.

SUSPENDED SOLIDS

The Utah standards for Classes C, C_1, and D waters require that no wastes shall be discharged that result in suspended solids which are readily visible or appreciably change the color of the receiving streams.

Suspended solids in the streams were determined during the November-December study, only.

On Worm Creek and the Cub River Canal above the entrance of Preston sewage, the suspended solids averaged 114 and 7.0 mg. per liter, respectively. The high value on Worm Creek probably resulted from natural sources of silt.

On Worm Creek below the Cub River Canal, but above the Franklin County Sugar Company, suspended solids averaged 40.1 mg. per liter. Below the sugar plant, but above the state line, the average increased to 543 mg. per liter.

Suspended solids on Cub River above the state line and above Worm Creek averaged 9.2 mg. per liter. Below Worm Creek and the state line,but above the Amalgamated Sugar Company, the average was 111 mg. per liter. Below the Amalgamated plant, average suspended solids decreased to 24.2 mg. per liter, despite the sixty-two tons per day of suspended solids discharged from the Amalgamated plant. Based on the stream flow at this station, and in the absence of any sedimentation in the stream, the plant should have added 407 mg. per liter to the 111 mg. per liter in the Cub above the plant, for a total of 518 mg. per liter.

The Bear River in Idaho had an average of 20.7 mg. per liter of suspended solids. Below the Cub River and the Sego Milk and Rocky Mountain Dairy Products companies, the average suspended solids increased to 49.3 mg. per liter. Below Cutler Reservoir the average dropped to 7.6 mg. per liter, as a result of sedimentation in the reservoir.

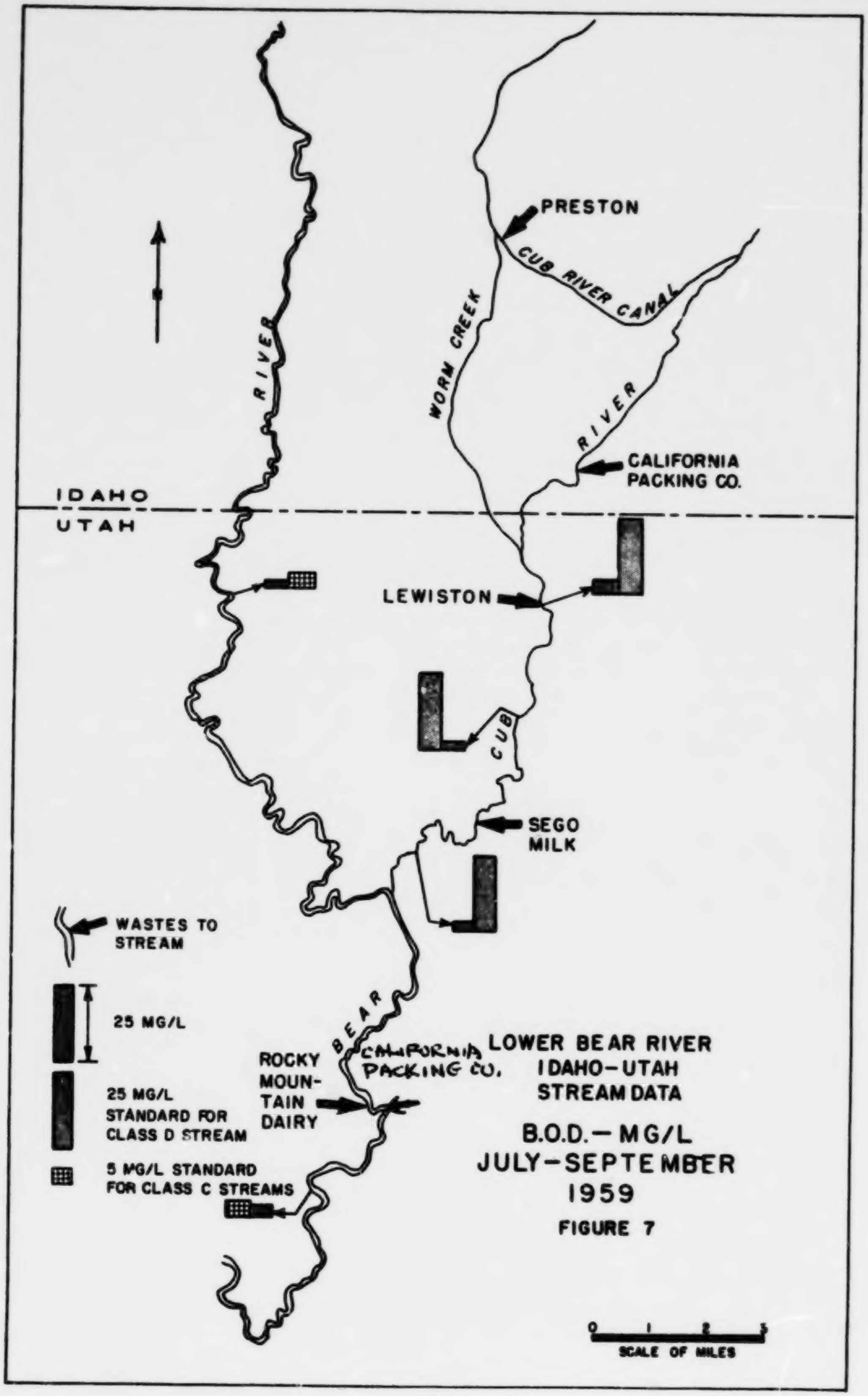
FIELD OBSERVATIONS

Visual observations of the effects of pollution on water conditions have been made on several occasions. The most recent was on November 16, 1959.

Worm Creek and the Cub River Canal above the Preston sewage discharge were clear, with no visual evidence of pollution. Immediately below the confluence of these two streams the effects of the Preston sewage were visible in the form of grey to light brown slime growths on rocks in Worm Creek. Farther downstream on Worm Creek but above the Franklin County Sugar Company, no visual evidence of pollution was detected. About one mile below the sugar plant,Worm Creek was highly turbid and brown. No biological growth of any kind was detected. Still farther downstream, about one mile above the Idaho-Utah state line, the creek was dark brown,and the odor of beet sugar wastes, resembling the odor of molasses, was very noticeable.

On the Cub River near Franklin, Idaho, and above the California Packing Company, there were no visual evidences of pollution. Patches of green and brownish algae attached to rocks appeared typical of an unpolluted stream. The Packing Company plant was processing cabbage, and in the Cub River below the plant there were filaments of biological slimes attached to submerged branches and debris, which are typical of streams polluted by organic wastes. Deposits of a fine, white material were noted.

Farther downstream on the Cub River in Utah, and below Worm Creek but above the Amalgamated Sugar Company, the water was dark brown with suspended particles. The water was several feet deep here, which was in a small impoundment.Attached biological slime filaments were short,apparently because of the very low velocity of the impounded water.With higher velocities, they probably would have developed into


PRESTON
CUB RIVER CANAL
WORM CREEK
CUB RIVER
RIVER
CALIFORNIA PACKING CO.
IDAHO
UTAH
LEWISTON
CUB
SEGO MILK
BEAR
CALIFORNIA PACKING CO.
ROCKY MOUNTAIN DAIRY
WASTES TO STREAM
25 MG/L
25 MG/L STANDARD FOR CLASS D STREAM
5 MG/L STANDARD FOR CLASS C STREAMS
0 1 2 3
SCALE OF MILES

LOWER BEAR RIVER
IDAHO-UTAH
STREAM DATA

B.O.D.—MG/L
JULY-SEPTEMBER
1959

FIGURE 7

long filaments. Below the Amalgamated Sugar Company plant, the water was still dark with suspended solids particles, although it appeared somewhat clearer than the deeper water observed just above the plant. There was a profusion of both long attached filaments and floating detached clumps of biological slimes.

The Bear River was observed at two points in Idaho above the Cub River. At neither point was there visual evidence of pollution. Below the Cub River and the Rocky Mountain Dairy Products Company west of Smithfield, Utah, there were both floating patches of biological forms and long attached filaments of biological slimes on submerged surfaces along the side of the Bear on which the Cub River enters.The tops of the floating patches were greenish, and the bases were dark brown to black, which is typical of algae that grows on the surface of organic sludge deposits, detaches due to decay, and floats downstream.

Below the Cutler Reservoir the Bear River was clear, with no visual evidence of pollution.

BIOLOGICAL INVESTIGATIONS

Biological forms in the Bear and Cub Rivers and in Worm Creek were investigated in August and November, 1954. The principal findings during these two periods are summarized below.

PLANKTON:

During August, plankton samples were collected at two stations on the Bear River,one in Idaho near Preston, and one a few miles above the mouth of the Bear. At the Idaho station the plankton were representative of a reasonably clean stream, with plant forms predominating. At the station near the mouth of the Bear, animal plankton predominated. This change was attributed to suspended solids that reduced the penetration of light, which is essential to growth of plant plankton.

Two stations on the Cub River also were samples for plankton during August, one in Idaho above sources of pollution, and one in Utah below the California Packing Company and below Worm Creek,carrying the sewage from Preston. Here again, plant plankton predominated at the upstream station, while animal plankton and pollution-tolerant forms were found at the Utah station.

In November, collections were made at the Bear River station in Idaho, one below the confluence of the Cub River with the Bear, and one below Cutler Reservoir. The Idaho station again yielded plankton typical of an unpolluted stream. At both the downstream stations in Utah, there were Sphaerotilus, or bacterial slime organisms, and zoogleal colonies typical of organic pollution.

November collections on the Cub River were at the same station used in August in Idaho, and at one station near the mouth of the Cub. Here again, the Idaho station yielded principally plant forms, while the station near the mouth of the Cub yielded bacterial slime organisms, zoogleal colonies and pollution-tolerant protozoa. An attempt to collect plankton samples on the Cub River a short distance below the mouth of Worm Creek was unsuccessful because of a heavy concentration of beet pulp fragments.

An attempt at collection of plankton on Worm Creek near its mouth was also unsuccessful because of beet pulp fragments. At a station on Worm Creek below the entrance of Preston sewage, bacterial slime organisms and zoogleal colonies, typical of pollution, also were found.

BOTTOM FAUNA

On the Bear River in Idaho the bottom forms were normal for an unpolluted stream. Downstream in Utah, both below the mouth of the Cub River, and near the mouth of the Bear River, productivity of bottom forms was quite low, numbers of species were small, and forms tolerant of pollution predominated. All of these factors are indicative of pollution.

Collections of bottom fauna on the Cub River above Franklin, Idaho, yielded results typical of an unpolluted stream. In both August and November, collections below the California Packing Company at Franklin, Idaho, indicated conditions of severe pollution. There were only two species, red midges and sludge worms, both typical of pollution. Heavy deposits of sludge supported large numbers of these bottom forms. Although the canning plant was closed in November, the sludge deposits remained to produce even larger numbers of these pollution indicators than were found in August.

Some effect of the California Packing Company pollution extended downstream in the Cub River to the station below the mouth of Worm Creek in Utah, during August. Red midges and sludge worms were found, but other forms less tolerant of pollution also were present. "Pollutional blankets" of blue-green algae were abundant. In November at this station, combined wastes from upstream, including those from the Franklin County and Amalgamated sugar plants, caused a severe reduction in bottom fauna, with only a few numbers of organisms found.

On Worm Creek above Preston in August there was practically no flow. In November, bottom organisms were plentiful, and were typical of a clean stream. In August, the collection at the station near the mouth of Worm Creek indicated heavy pollution due to Preston sewage and low stream flow, and possibly irrigation return flows. In spite of the higher stream flow in November at this station, the added pollution from the Franklin County Sugar Company almost eliminated bottom life. A few sludge worms, which thrive in polluted water, were found.

FISH

Trout fishing is reported to be excellent in the Bear River from above Preston upstream to Oneida Dam in Idaho.

From Preston downstream to the mouth of the Bear, there are only a few trash fish, such as carp and catfish, and even catfish have been practically eliminated since an extensive fish kill in November, 1953. This kill was attributed to pollution from the Utah-Idaho Sugar Company on the Malad River, but failure of the fishery to recover is attributed to continuing pollution from the major sources, and to heavy siltation caused by irrigation practices in an area in Idaho west of Preston.

A fish population study in 1954 failed to detect any fish of any kind in the Bear River at a point seven miles below the confluence of the Cub River. The same study produced only a few carp below Cutler Dam.

Trout fishing is mediocre in the Cub River above Franklin. Large minnow populations abound, which should support sport fishes. Probably, the excessive downstream pollution hinders upstream migration of sport fishes for spawning, which would maintain the sport fisheries in the upper reaches of the Cub River and Worm Creek.

IRRIGATION

The heavy siltation of the Bear River that resulted from irrigation practices in Idaho west of Preston has been mentioned previously. In areas drained by Five-Mile and Deep Creeks, irrigation raised the ground water table and caused seepage and sloughing of sandy soil from embankments. It has been estimated that in the forty years previous to 1950, ten million tons of soil were washed into the Bear River from this source, and the bed of the Bear River has been silted almost uniformly with deposits five to six feet deep. Recent erosion control measures have achieved some success in reducing the severe erosion.

Mineral analyses included in the Utah Water Pollution Control Board study of July, 1958, through September, 1959, indicated Bear River water to be of questionable quality for some irrigation uses. At a station west of Lewiston, Utah, a few miles below the Idaho-Utah state line, and at the station west of Smithfield, below the confluence of the Cub River, mineral water quality indicated a high salinity hazard from late in March to late in September.

On the Cub River a few miles below the state line, and below the confluence of Worm Creek, the data during most of the same period indicated a medium salinity hazard. For a short portion of the time, during late July and early August, the salinity hazard was indicated to be high. On the Cub River just above its mouth, the salinity hazard was medium throughout the period.

The source of the minerals contributing to the salinity hazard of these waters is not known. The mineral constituents may originate in natural sources, or they may be introduced by upstream use of the water for irrigation, or by industrial waste discharges. Use of the water for irrigation is believed to be the most probable cause.

BEAR RIVER: EVANSTON, WYOMING to WYOMING-UTAH BORDER

The Bear River is formed a few miles southeast of Evanston, Wyoming, by the junction of Sulfur and Mill Creeks. The river flows northwesterly to Evanston and continues northward for about seventeen miles, where it turns abruptly westward to cross the Wyoming-Utah state line near Woodruff, Utah. The river travels an estimated thirty to thirty-five miles in this distance.

Evanston, with a sewered population of about 5,000, has a sewage treatment plant. The plant is equipped for chemical flocculation, sedimentation, chlorination, and sludge digestion and drying. At the time of a visit to the plant in November, 1959, the chemical flocculation and chlorination facilities were not in use. In addition, the Union Pacific Railroad Company shops at Evanston discharge wastes of unknown characteristics to the Bear River.

Samples for coliform bacteria determination have been collected from the Bear River above Evanston and near the Wyoming-Utah state line during several periods in the past eighteen months. Periods during which samples were collected, and median MPN's for the periods, are presented in Table 3.

During two of the five periods, the median coliform bacteria near the Wyoming-Utah state line were a little less than one-fifth of the standard for Class C waters.

A short distance below Evanston, the Chapman Canal diverts water for irrigation in Utah. This canal crosses the Wyoming-Utah state line about one-half the distance from Evanston to the point where the Bear River crosses the state line. No samples for coliform bacteria have been collected from the canal, and therefore, its bacterial quality at this point is unknown. At an approximately equivalent point on the Bear River, the median coliform bacteria were between 3,000 and 4,000 per 100 ml., which is below the standard for Class C waters.

TABLE 3

BEAR RIVER, WYOMING-UTAH
MEDIAN MPN'S OF COLIFORM BACTERIA
ABOVE AND BELOW EVANSTON, WYOMING

Period	Coliform Bacteria MPN per 100 ml.	
	Above Evanston	Near State Line
4/23/1959*	Less than 23	Less than 23
8/24-28/1959	--	43
9/14-18/1959	140	810
11/9-13/1959	--	430
4/21-28/1960	23	930

*Results questionable, samples in transit, uniced, for four days.

Samples for mineral analyses were collected from this reach of the Bear River during April, August, and September, 1959. Above Evanston, the salinity hazard was low. At the Wyoming-Utah state line, the salinity hazard increased to high. As in the case of the Lower Bear River, the source of the added mineral constituents in this river reach is unknown.

MALAD RIVER: MALAD CITY, IDAHO, to GARLAND, UTAH

The only possible present source of interstate pollution on the Malad River appears to be Malad City, Idaho. This town, with 3,000 sewered population, provides primary treatment and chlorination for its sewage. Until such time as there may be a major increase in population or industry, or a failure in this treatment plant, it does not appear that pollution of interstate waters of the Malad River is occurring.

SUMMARY AND CONCLUSION

Pollution of interstate waters of the Bear and Cub Rivers, and of Worm Creek, occurs in the vicinity of the Idaho-Utah state line. Sources of municipal and industrial wastes causing the pollution are Preston, Idaho, the Franklin County Sugar Company at Whitney, Idaho, and the California Packing Company at Franklin, Idaho. In addition, irrigation practices in Idaho have led to serious erosion and consequent siltation of the Bear River in Utah, and presumably have contributed to a high salinity hazard in the waters of the Bear and Cub Rivers.

The sources of wastes in Idaho, both separately, and in combination with wastes from Lewiston, Utah, and the Amalgamated Sugar Company at Lewiston, the Sego Milk Company at Richmond, Utah, and the Rocky Mountain Dairy Products Company and the California Packing Company at Smithfield, Utah, have contributed to adverse effects on water quality and use, which extend from the Idaho-Utah state line on Worm Creek and Cub River to the mouths of these two streams, and on the Bear River downstream at least as far as Cutler Dam.

The adverse effects are reflected by high coliform bacteria, B.O.D., and suspended solids concentrations, by low dissolved oxygen concentrations, by poor to practically no biological flora and fauna, including fish, by high salinity hazard, and by objectionable visual and olfactory conditions.

These adverse conditions adversely affect the use of the water for recreation, including fishing, for irrigation and stock watering, and as a habitat for fish and wildlife.

Based on the foregoing information, it is concluded that pollution of interstate waters of Worm Creek and the Cub and Bear Rivers endangers the health and welfare of persons using these waters in Utah.

MR. STEIN: Thank you, Mr. Kittrell, for a very comprehensive and excellent report. It seems that if we continue to survey the Bear River, for its size it will take its place with other rivers of the country as being among the most studied rivers, such as the Potomac and the Ohio.

At this point, we would like to ask for questions or comments from the Conferees. Mr. Thatcher, do you have any questions or comments?

MR. THATCHER: I have no comment, except to thank Mr. Kittrell for the excellent job he has done in analyzing this problem for us.

MR. STEIN: Do you have any comments or questions, Mr. Green?

MR. GREEN: Yes. Apparently there was an oversight. We would like a correction to a statement in the early part of the report to the effect that sewage and industrial wastes discharged in the vicinity of Evanston, Wyoming, are treated. I believe it was simply an oversight in reading the report that Mr. Kittrell did not say that these wastes are treated.

MR. KITTRELL: I am perfectly agreeable to that insertion, and I do mention it later in the report.

MR. GREEN: I just want to be certain that the word is contained in the record.

MR. STEIN: Mr. Anderson, do you have a question?

MR. ANDERSON: Yes. Since you strayed from the text here a little bit and discussed Malad, I wonder on what basis you determined -- I suppose this was probably true that there was no interstate problem there; however, I did not want it implied that the present sewage treatment from Malad is satisfactory from our point of view. In fact, they have already taken steps to change it, and I just want it in the record that we did not consider this primary plant as a satisfactory treatment, even though its effect is probably dissipated by the time it reaches the state line.

MR. STEIN: Do you have any further comments or questions, Mr. Anderson?

MR. ANDERSON: Not at this time.

MR. STEIN: If not, thank you, Mr. Kittrell, and we will proceed.

I would like to make one point clear. I call your attention to the determination of the Conferees at the First Session of the Conference, point six, which stated that the State of Utah, with the assistance and advice of the Public Health Service, is to gather information and data which will permit the State of Utah to classify the waters of the Bear River to the Utah state line. I take it that this survey as summarized by Mr. Kittrell meets that requirement and that commitment. Is this correct, Mr. Thatcher?

MR. THATCHER: For the assistance, you mean?

MR. STEIN: Yes.

MR. THATCHER. Yes. I think we have all the information we now need to proceed with our part of the obligation that was stated at that time. We gathered some of this material ourselves, and have depended upon you people for some.

MR. STEIN: I think the record should show that this is a joint State-Federal undertaking. Just because Mr. Kittrell presented the complete data, I would like to indicate that we have relied very heavily on State information and State resources for a good portion of our material.

Now, Mr. Nasi, I wonder if you would continue.

MR. NASI: Thank you very much, Mr. Kittrell.

In accordance with the usual practice in conducting a conference, before we go on to the other Conferees, I would like, as the Public Health Service Conferee,to recognize representatives of several Federal agencies who are present because of their official program interest in the matter under consideration. I may miss some, so I'll do this in a sort of roll call, if I may, Mr. Chairman.

I believe Mr. Ben Heywood is here, who represents the Soil Conservation Service of the Department of Agriculture. Mr. Heywood, would you stand; and do you have a statement, sir?

MR. HEYWOOD: I have no statement.

MR. STEIN: If any of you do have statements, we would appreciate it if you would come up to the microphone on the floor.

MR. NASI: The Bureau of Reclamation has been mentioned from time to time in connection with the Bear River work, and we have representing that Bureau two individuals, and perhaps others. Mr. Dean Bischoff, of the Logan Development Office, is here, and I believe he will give a statement. Before he does, may I also introduce Mr. Garry Fisk, of the Public Health Service,who is detailed with the Bureau's Region 4 Office in Salt Lake City. Mr. Bischoff, will you please present your statement at this time?

MR. BISCHOFF: Mr. Chairman, and ladies and gentlemen. I will briefly review the comments which were given two years ago, and bring you up-to-date on some of the activities of the Bureau of Reclamation. I do appreciate the invitation to attend this Conference.

Pollution abatement is of vital concern to the Bureau of Reclamation, as the Bureau is charged with the formulation of new water storage projects for continued agricultural growth. As these projects are planned, we are charged with the over-all economic development in the area, to include other purposes besides irrigation, such as flood control, hydroelectric power development, recreation, fish and wildlife propagation, and municipal and industrial uses. The primary purpose of the Bureau of Reclamation then, is to construct both single and multiple-purpose water development projects, which investigations show are feasible from both an engineering and an economic standpoint.

The Bear River drainage area in general is the area of responsibility of the Logan Development Office for this purpose.The projects investigated by our office are isolated, and are not continuous along the Bear River. Within this particular valley -- this Cache Valley -- the Bureau has investigated and constructed three single-purpose irrigation developments: the Hyrum and Newton Projects in Cache County, Utah, and the Preston Bench Project in the area northeast of Preston, Idaho. All of these projects are located on streams tributary to the Bear River in what is commonly known as the Cache Valley.

Other investigations which have been conducted by the Logan Development Office include the Little Bear Project, located in the south end of Cache Valley; the East Cache Project, located east of Bear River between Smithfield, Utah, and Franklin, Idaho; and the West Gem Project in the vicinity of Grace, Idaho. Some reconnaissance investigations have also been conducted in Bear Lake County,Idaho, on projects which are located on streams tributary to Bear River.

In November of last year, the Bureau released for review and comments by the interested State and Federal agencies, a feasibility report of the Woodruff-Cokeville Project. This project, as now formulated,is a multiple-purpose project which would provide substantial agricultural and fish and wildlife benefits. This project is located on the main stem of the Bear River above Bear Lake. It would supplement the irrigation of approximately 35,000 acres of land adjacent to Bear River, from Woodruff, Utah, on the south, to Cokeville, Wyoming, on the north. The total length of the area is some forty miles. The storage feature for the project would be the Woodruff Narrows Dam and Reservoir, located on Bear River approximately seven miles east of Woodruff, Utah. The Woodruff Narrows Dam would create a reservoir with a total capacity of 25,400 acre feet, of which 22,000 acre feet would be active.

Another project currently being investigated, and of considerable interest to all, especially those in the Lower Bear River basin, is the Bear River Project. This project would irrigate some 80,000 acres of full and supplemental service lands located on both the east and west sides of the Bear River in northern and central Cache Valley and also in Box Elder County, Utah, and Malad Valley, Idaho. Besides providing water for new and existing agricultural developments, this project would include a power development. It would provide a dependable late-season water supply for the Bear River Migratory Bird Refuge located west of Brigham City,and would help to eliminate flood damage occurring in the low lands along Bear River from the vicinity of Preston, Idaho, to the Bear River Bay. Preliminary studies show there is an immediate requirement of 5,000 acre feet of water for municipal use, primarily for cities and communities here in the Cache Valley. This the project would furnish, and under Title 3 of the Water Supply Act of 1958, could ultimately supply substantial amounts for future municipal and industrial use.

Although not directly involved with the broad, over-all public health aspects of the Bear River,the Bureau is vitally concerned with the public health aspects and problems of the area included within the potential Bureau of Reclamation development. The Bureau of Reclamation has had for several years,cooperative agreements with the Public Health Service,and we recognize the desirability and importance of controlling pollution. A representative of the Public Health Service is stationed in the Regional Office of the Bureau of Reclamation in Salt Lake City. At the present time, Mr. Garry Fisk, Sanitary Engineer, Public Health Service, occupies this position. Along with other duties, it is his responsibility to review, investigate, and make a written report as to the effects of a potential Bureau development will have on public health. Mr. Fisk is at the present time completing a report on the quality of water of the Bear River for specific use of the Bureau of Reclamation in planning the Bear River Project and other developments. If construction of a project will create public health problems, his report contains a discussion of the problems, pointing out the need for additional abatement of pollution. Every attempt is made by the Bureau to alleviate the problem. The Bureau will cooperate to the fullest extent with the Public Health Service, within its authority.

MR. STEIN: Thank you, Mr. Bischoff. Will you wait there just a moment? Do we have any questions or comments?

MR. THATCHER: I would like to ask Mr. Bischoff if, in this consideration,the minimum flows below these impoundments are being considered.

MR. BISCHOFF: Yes, they are.

MR. STEIN: Mr. Bischoff, as I understand these projects, they are very essential for areas of the country such as this, which are relatively arid. However -- and I do recognize the fact that your Department cooperates most closely with us on the pollution aspects of the problem -- I would like to emphasize one point. As I understand it, a considerable portion of the waters used in these projects is used for irrigation. Is that correct?

MR. BISCHOFF: That is correct.

MR. STEIN: Use of water for irrigation creates a consumptive use. That is, a large portion of that water does not return to the stream. Therefore, if we have less water in the streams, we are going to have a continuing, intensified problem of keeping what water there will be in the streams as free from pollution as we possibly can. Is that about what we are coming to?

MR. BISCHOFF: We are aware of that situation.

MR. STEIN: That is right. I think we have to balance this,but I would like to point this out while Mr. Bischoff is up.We can expect no major miracle in producing more water in the streams for dilution purposes. This is an area of the country where we have to make use of every ounce of water we have, and efficient use of it. These projects, I am sure, are essential to the development of this country and this area, but in the development of these projects we must recognize, even if we maintain minimum stream flows, we are going to have to make sure that we do everything possible to minimize the effectr of pollution, so the quality of the water in the streams can be as good as we can possibly make it. Thank you, Mr. Bischoff.

MR. LONG: (from audience) Murray, there is one thing --

MR. STEIN: Mr. Long, would you identify yourself, please?

MR. LONG: Frank Long, from Buffalo, Wyoming. There is one thing about the Bear River water that is different than any of the other rivers in the world. It flows into the Great Salt Lake. All the rest of our waters are gone from our United States, but we still have this within our State. On these reservoirs for holding, as I see it, they would be built up from flood waters.

MR. STEIN: That is right. I think Mr. Long makes a point that is also very important for us to consider here. We do know that the Bear River is the largest river on this continent, at least,which does not reach the sea. Generally speaking, while we have some very deplorable pollution situations in other areas of the country, if a long lasting pollutant gets into these waters, sooner or later it gets flushed out to sea. This does not obtain here. In some other areas we may have the same situation, such as in the Great Lakes. This is not the only one, but I think this is an added point for the people here to keep in mind, that if a persistent, long lived pollutant is put into the Bear River,it ends up in the Great Salt Lake, and there it stays.

Mr. Nasi, shall we continue?

MR. NASI: Thank you, Mr. Chairman. We do have a few other Federal representatives whom I would like to recognize. Representing the U.S. Geological Survey of the Department of the Interior, is Mr. Wallace Jibson, of Logan, Utah.

MR. JIBSON: I do not have a prepared statement, Mr. Chairman. We are happy to be of assistance in the collection of data, and will be glad to continue.

MR. NASI: Thank you very much,Mr. Jibson. The U.S.Geological Survey, and especially the program under Mr. Jibson here, has been most cooperative, and much of the data presented has been obtained through the services of that agency. We are very appreciative of their continuing assistance and cooperation. I don't know,Mr.Jibson, if there is anyone else here from the Geological Survey.

MR. JIBSON: I expected Mr. Conners from Salt Lake City, but I have not seen him here.

MR. NASI: Representing the Fish and Wildlife Service is Mr. Vanez Wilson, who made a very interesting and worthwhile statement at our last session. Mr. Wilson, it is very nice to see you here.

MR. WILSON: I have no prepared statement. We are very pleased to be represented here, and will do anything we can to assist in the solution of the problem.

MR. NASI: Thank you. I neglected to indicate your responsibility as manager of the bird refuge at the mouth of the Bear River near the Great Salt Lake, below Brigham City.

Is there any other Federal agency representative here whom I may have overlooked? I am sorry I was unable to get in touch with all of you. I believe that concludes the statement of the Public Health Service, Mr. Chairman.

MR. STEIN: Mr. Wilson, I wonder if we could ask you, for the record, a question or two based on your last statement. Would you be willing to answer a few questions concerning your experiences on the wild fowl preserve?

MR. WILSON: I would be pleased to attempt to do that.

MR. STEIN: As I recall your statement at the First Session of the Conference, Mr. Wilson, you indicated that you were in charge of a waterfowl preserve near the Great Salt Lake and Bear River. Would you care to identify that for us now?

MR. WILSON: Yes. I am the Manager of the Bear River Migratory Bird Refuge, Which is operated, I suppose you could say, by the U. S. Fish and Wildlife Service. It is one of the largest Federal waterfowl preserves in the United States, and considered a very important area. I would make the statement also, that we are the last users on the River, and at this time of the year, we are the cesspool.

MR. STEIN: Would you consider this migratory bird preserve important for the migratory fowl of this Nation, and this area?

MR. WILSON: Yes, I would, particularly of the western states, it is one of the important concentrating areas.The Federal Government has spent a considerable sum of money in developing this area. It is a long story to go into the history of the preserve, and the purposes for developing it, but it is considered a very important concentrating area for migratory waterfowl during periods of migration.

MR. STEIN: Have you ever noted,in your management of this refuge, any deleterious effects on these migratory waterfowl which might be attributed to pollution?

MR. WILSON: That is a difficult question to answer. We have several research men working on the problem at the present time. As Congressman Dixon mentioned, there was a large loss of waterfowl from botulism in years past. We feel that due to our development work, we have eliminated this loss to a great extent; but to be able to say just what effect stream pollution has on the loss of bird life is difficult. We do know,and it has perhaps been mentioned previously, that due to stream pollution we have lost the fish life in the Bear River, and it has affected the fish life on the Refuge -- and, of course, the fish provide food for a large number of our fish-eating birds in the area -- so indirectly, we are eliminating some of the food.

MR. STEIN: Thank you, Mr. Wilson. Mr. Nasi?

MR. NASI: That concludes the Public HealthService statement, Mr. Chairman.

MR. STEIN: At this point, we would like to call on Mr. Thatcher, of Utah, for his statement, and to ask Mr. Thatcher to call on those people he has invited to participate in the Conference. Mr. Thatcher.

MR. THATCHER: I might say that the statement which I am about to read was adopted as the official statement of the Water Pollution Control Board at a meeting held on June 28, 1960. It also constitutes the official statement of the Utah State Department of Health. In that respect, it is a joint statement, as follows:

The date for the Second Session of the Conference on Interstate Pollution of the Bear River was established by the U.S. Public Health Service following their decision that they could not grant requests of the Utah Water Pollution Control Board for delays, to permit further study of the Bear River problem.

The Utah Board has been unable to complete classification of the Bear River and its tributaries as programmed during the First Session of the Conference, but the Board has reached certain conclusions concerning this obligation, and is prepared to proceed with the formal processes of classification in the near future.

The following classifications are proposed:

Bear River from State Line to Cutler Dam	Class C
Bear River from Cutler Dam to confluence with Malad River	Class C_1
Bear River from confluence with Malad River to mouth	Class D_1
Cub River from State Line to mouth	Class D
Worm Creek from State Line to confluence with Cub River	Class D
Malad River from State Line to waste outfall of Garland Plant of Utah-Idaho Sugar Company	Class C_1
Malad River from waste outfall of Garland Plant of Utah-Idaho Sugar Company to mouth	Class D_1
All other portions of, and tributaries to Bear River in Utah	Class C

It will be noted that the classifications designated by C_1 and D_1 were not described in the First Session of the Conference. These are new classifications proposed for formal adoption to meet certain conditions disclosed during the study of the Bear River pollution problem. They have the effect of exacting the same water pollution controls called for by C and D classifications, while permitting excesses of certain natural constituents.

Adoption of the proposed classifications will involve one public hearing on a change in standards for classification, and another on the actual assignment of classifications. It is anticipated that the hearing on standards can be held within ninety days, and that following their adoption, the hearing on classifications can be held within ninety days.

MR. STEIN: Are there any questions? Do you have a question, Mr. Nasi?

MR. NASI: I was just going to ask Mr. Thatcher if there are other streams in the State of Utah that have been classified as D?

MR. THATCHER: Yes. We have classified one other stream in the State prior to this time, the Weber River, and the classification assigned to that was C above the Ogden sewer outfall, and Class D below that outfall.

MR. NASI: This is a small stretch of stream below the outfall to the Salt Lake itself, in an agricultural area that is not extensively populated?

MR. THATCHER: That is correct.

MR. NASI: This is the first time, actually, that the State Board is venturing into a classification of this low level in an area that has a general population involving communities as well as agriculture?

MR. THATCHER: At any point about communities, I would say that is true.

MR. STEIN: Mr. Thatcher, I wonder if the C_1 or D_1 classifications have anything to do with the salinity hazard which Mr. Kittrell mentioned.

MR. THATCHER: Well, they are related to it. The reason we decided to go to those sub-classifications was that our studies had disclosed the presence of dissolved minerals in certain sections of the Bear River which exceeded the requirements of the Class C and D standards. Our investigation further indicated that the mineralization we found was due to natural causes, beyond the Board's control.

MR. STEIN: This is the point I want to make. As I listened to Mr. Kittrell's report, he indicated that the cause of some of the salinity hazard was unknown, but it could be caused by natural deposits in the ground, agricultural processes, or perhaps an industrial process.He felt the most probable cause was agricultural processes. Now, this is as I listened to his report. If we are faced with increased salinity or mineralization due to an industrial process or an agricultural process, I don't know that we can properly classify that as due to natural causes. It may be something we cannot cope with, but if it deals with man's activities, I think we should at least clarify that point -- and this is something I am not very clear on.

MR. THATCHER: I think it is possible, as Mr. Kittrell stated, that some of this could be agricultural return flow. However, we have not gone as far as Mr. Kittrell in examining the salinity hazards on all sections of the stream,and the portions to which we had particular reference were below known sources of mineral springs. I think the problem which Mr. Kittrell raises is one that probably does have to be considered, but we are not prepared at this point to fully evaluate it. I think it is a possibility, though.

MR. STEIN: As I understand it, the salinity problems due to irrigation return flows,or perhaps industrial activities, and I know of no indication of industrial activities in this area, would -- as a matter of fact, materially,your considerations, your classifications of C_1 and D_1 here, you feel certain that these variances are due to locations below mineral streams?

MR. THATCHER: That is correct. However, the way our sub-classifications are to be adopted, as decided up to this point by action of the Board, if we found a salinity or other mineral hazard that could be traced back to controllable sources, the fact that we had made a Class C_1 or Class D_1 classification would not limit our ability to proceed with abatement of that source. In other words, our standard is so stated that only those truly natural sources would be considered exempt from this control.

MR. STEIN: But if they were man made, you could control them?

MR. THATCHER: We could control them. That is correct.

MR. STEIN: I think for the purpose of the record, this has nothing necessarily to do with this situation, except for the long range point of view. In the Arkansas-Red River Basins, they are proceeding with an approach to try to control pollution of this type from natural sources, and it looks as though there may be at least some cause for optimism that we will be able to develop a method of controlling pollution from, say a salt spring, or something of that sort. The type of approach there obviously will have to be different than the type of pollution control approach.

Do we have any questions? Would you proceed, Mr. Thatcher, in calling on your people?

MR. THATCHER: The Water Pollution Control Board of Utah has previously sent out invitations to various people they thought would have an interest in the proceedings, and I would now like to call on all of those who received invitations, and ask if they have a statement. If there is no one representing these various agencies,we will go right on. If there is someone here representing them who cares not to make a statement, we would appreciate it if they would simply indicate that. I would like to call first on Dr. Vaughn Hansen, who is representing Utah State University.

DR. HANSEN: Mr. Chairman, Conferees,and ladies and gentlemen, we appreciate this invitation. Our statement is very brief. First of all, as landlord, shall I say, of this event, we assure you that you are all most welcome. There were some questions, or dust,raised when rumors were stirred around last Friday on a very elaborate TV program and so on. I think everyone has found that these gentlemen are quite harmless, and all has gone well, so they are certainly welcome, along with the rest.

We assure you that your problems are our problems, and when we say "your" problems, we mean not only the Public Health Service and the States represented here, but also these groups that are living along the river and are facing the pollution problem. Our general statement we should like to direct principally to the users of the Bear River, because it is our understanding that a study has been made, recommendations, or at least, facts gleaned. The problem now is one of taking, at least to a degree, corrective measures. The University will certainly do what it can to be of assistance in that program of correction. We believe there are many users that within themselves have not faced this problem before, of necessity, that technical assistance and support of others are necessary for them to be able to solve the problem. I am sure that I can say this with regard to the other Universities, not only in this, but in the other States. We would counsel that you do not overlook these sources of information and assistance, because within the universities you have an aggregate of various capabilities, laboratories, facilities, equipment, that can be brought to play upon this problem, and we would suggest that that not be overlooked, and that its usefulness be taxed to the maximum, that it be fully utilized. That contribution from the universities here and from the others is a unique contribution. We extend an invitation that that be brought into the picture.

We have as an example of it here, the research in this general area. I am not going to mention the different disciplines; you men of technical background understand those fully. But just one example of it is the Utah Water Research Laboratory, which is now functioning and in operation, and was authorized by the last Legislature. It will, we sincerely hope, be expanded in scope and activity this coming January. But an example of that is the fact that on the campus today, and the reason for my not being with you initially and having to leave in the next few minutes (I hope to be back a little later this afternoon) is the fact that one of the major companies, U. S. Steel, is on the campus working with us on a problem they have. We feel that there is certainly an opportunity here to assist others in their water control problems, that the laboratory and our efforts are directed toward the assistance to the water users of the State, and to this intermountain region as they can be utilized; that is its purpose. We pledge our support in any way that we might be able to lend it to the solution of this particular problem, as you gentlemen, as those in attendance here, see we might be able to fit in.

MR. STEIN: Are there any questions or comments? Mr. Thatcher.

MR. THATCHER: I would like now to call on representatives of the various cities in Cache, Rich and Box Elder Counties. First, Lewiston -- do we have any representatives from Lewiston? Cornish? Richmond? Trenton? Hyde Park? Wellsville? Menden? Millville? Paradise? Garland? Bear River City? Deweyville? Fielding? Clarkston? Newton? Amalga? Smithfield? Logan? Hyrum? Here is a gentleman from Hyrum. Do you have any statement? Thank you. North Logan? Providence? Nibley? Freemountain? Korin? Honeyville? Ellwood?

I believe there is a Mayors' Association which frequently represents these various cities. I wonder if someone is here from that association who would care to make a statement. If not, we will go on --

MRS. MICKLE: I am from Smithfield. I thought someone was officially representing us. I have no statement to make. I just want you to know that we are represented.

MR. THATCHER: Thank you very much. Utah-Idaho Sugar Company -- I believe we do have representatives from that company here. Mr. Gaddie.

MR. GADDIE: I am Robert S. Gaddie, of the Utah-Idaho Sugar

Company. The Utah-Idaho Sugar Company has plants in four states, among which is the Garland plant, which takes its process water from the Bear River and discharges its wastes into the same river. We do have a short statement on our program of pollution abatement at the Garland plant.

In 1950 the Federal Security Agency, Public Health Service, issued a bulletin entitled "An Industrial Waste Guide to the Beet Sugar Industry". On page ten of this publication is a table showing representative values of character and volume of beet sugar manufacturing wastes. Among all our many thousands of tests, we have found these values representative as stated, and below is reproduced in abbreviated form that portion of the table applicable to the Garland plant of the Utah-Idaho Sugar Company. Each of these has a B.O.D. listed per ton of beets in pounds. The normal wastes from a plant such as Garland consist of:

Waste	5-Day BOD Per Ton of Beets-Pounds
Flume Water	4.5
Pulp Water	2.0
Pulp Silo Drainage	12.3
Lime Cake Slurry	6.5
Lime Lagoon Effluent	.89
Condenser Water	.67
	Per Ton of Molasses Worked-Pounds
Steffen Waste Water	231.0

Prior to 1952 all of the wastes listed above except lime cake slurry were discharged into the Malad River. The lime slurry has been lagooned since about 1935. In 1952 equipment was installed for the concentration and sale of Steffen waste water. In 1957 vibrating screens were provided to screen all material coarser than 0.1 inch from the flume water. At the present time, the Utah-Idaho Sugar Company has under construction at the Garland plant a continuous diffusor and pulp drier. Along with this, provision is being made to return all pressed pulp water for re-use in the process, and this installation will be completed in time to process the 1960 beet crop.

Based on the values given in the table, the net result of this program will be the elimination of approximately 85% of the B.O.D.

previously discharged into the river. In other words, the construction this year will have removed all the pulp water, all the pulp press water, all the pulp silo drainage, and the sweet pulp which has previously been getting into the Malad River. During the 1960 campaign, the only wastes which will be discharged from the Garland plant into the Bear River through its tributary, the Malad, will be screened flume water and a small stream of clear effluent from the lime lagoon.

MR. STEIN: Thank you. Are there any questions?

MR. GREEN: Yes, just as a matter of curiosity, to what extent do you remove dirt and silt from the waste water before you discharge it into the river?

MR. GADDIE: At the present time, everything finer than .1", which includes most of the silt, is going into the river.

MR. GREEN: Do you have any idea as to how many tons per day that might be?

MR. GADDIE: Yes, we do have a pretty good idea. I don't think I have the figure in mind. We have calculated it. I could make an estimate that it would be about -- no, I guess not, I would have to figure that one.

MR. GREEN: Does your company have future plans to remove such silt? Do you feel that that is practical?

MR. GADDIE: Yes, definitely. It all hinges on trying to purchase a farm across the river which we have been unable to buy up to the present time. That, of course, is the final end point -- to settle the flume water, after which the effluent from the plant will be about as clean as we can get it, from a pollution standpoint.

MR. STEIN: For what purpose do you need the farm, sir?

MR. GADDIE: To use the land for settling ponds.

MR. STEIN: In other words, you want to build lagoons on it?

MR. GADDIE: That is correct.

MR. GREEN: One other question. What approximately is the B.O.D. that you are discharging in terms of pounds of B.O.D. per ton of beets sliced?

MR. GADDIE: As listed in the table which I mentioned, the flume water, four and one-half pounds per ton of beets sliced, which is just about the sum total of it.

MR. STEIN: Do you have any comments or questions, Mr. Anderson?

MR. ANDERSON: No, sir.

MR. STEIN: Do you, Mr. Nasi?

MR. NASI: I have no question. I think Mr. Gaddie's statement is to be commended, or should I say the progressive attitude on the part of your establishment is to be commended, for the improvement of the wastes that you are discharging and the ultimate that you have achieved so far of four and one-half pounds of B.O.D. per ton of beets sliced. I think this is very commendable.

(From audience): There is a matter of --

MR. STEIN: Do you want to come up to the microphone, please?

(From audience): No. Just a matter of correction, in the early part of his report, Mr. Gaddie stated that they take their water from the Bear River and discharge their wastes into the Bear River. That's supposed to be the Malad River.

MR. GADDIE: We take the process water from the Bear, and do discharge the wastes into the Malad, which, of course, reaches the Bear in just a short distance.

MR. THATCHER: Thank you, Mr. Gaddie. Now I would like to ask the representative of the Amalgamated Sugar Company if he has a statement.

MR. COTTRELL: Mr. Chairman, my name is R. H. Cottrell, representing the Amalgamated Sugar Company.

Following the previous meeting here on this subject, the Amalgamated Sugar Company adopted a program to abate the pollution which we are introducing into the Cub River. We have submitted that program to Mr. Thatcher and his staff, but have received neither approval nor disapproval of it. Nevertheless, starting in following that previous meeting, we have adopted a program and carried it out, and expect to continue to carry it out. With your permission, I would like to have our Chief Engineer, Mr. Heiner, describe it in greater detail.

(From audience): Before this gentleman leaves the podium, I would like to interpose --

MR. STEIN: Would you introduce yourself, for the record?

MR. SAMSON: John Samson. When was that matter submitted to the Utah authorities?

MR. COTTRELL: This past winter.

MR. SAMSON: That's all. Thank you.

MR. THATCHER: May I make a comment on that? Mr. Cottrell, was this proposal formally presented for approval by the Board?

MR. COTTRELL: No, sir. It was discussed informally with you and your staff, and our understanding was that you could not give us a definite statement without having a classification of the stream, which has not yet been decided. I am not criticizing you or your staff, Mr. Thatcher, but I will say we have been working in the dark to a certain extent. We know that we are one of the worst offenders, and we are trying to correct it.

MR. THATCHER: I just wanted to make certain we had not missed a formal proposal, Mr. Cottrell. Mr. Heiner?

MR. HEINER: I am Sylvester Heiner, of the Amalgamated Sugar Company. Mr. Chairman, Conferees, and ladies and gentlemen. Our program up-to-date as a first step involved the installation of a screening plant and a grit chamber combination, to remove vegetable matter coarser than about one-sixteenth of an inch; and also a grit chamber which removes grit coarser than sixty mesh. This program, as far as the screening plant is concerned, has been completed except for the addition of one screen, which is being installed this year. Our second step involves the purchase of land and also the installation of a large lagoon which has a capacity of about 350 acre feet. We intend to discharge part of our wastes in this lagoon and retain them. Then the beet flume water we had still intended to discharge into the Cub River. I might state that we obtain our water partially from the Cub River and partially from a water right that we have on High Creek,from a spring near the factory. I think that is about the extent of our planning, to date.

MR. STEIN: Are there any questions or comments?

MR. NASI: I was going to ask, Mr. Chairman, if Mr. Heiner had made any calculations like Mr. Gaddie had, with respect to the ultimate B.O.D. expectancy in terms of tons of beets sliced.

MR. HEINER: No, I'm sorry, I haven't. We were waiting for a definite stream classification, to know exactly what we would have to do to meet those requirements. I might state that our lagoon will be completed in time for this year's campaign.

MR. STEIN: I don't know, Mr. Heiner, whether you or Mr. Cottrell will want to answer this, but as I understand your position, your company stands ready to cooperate with reasonable corrective measures to meet this problem in accordance with State requirements. Is that correct?

MR. HEINER: Yes, that is correct.

MR. STEIN: Thank you. Are there any further questions? I don't have any further questions.

Now, it is 12:30, and I understand that we have to get down to the cafeteria if we want to eat. In order to move this along, we will recess for one hour, and just one hour, because we will have to proceed and get through. I think once we got started, the procedure has moved along as we expected, and we should be able to move forward rapidly this afternoon. We would like also to ask Mr. Thatcher if he has an announcement at this time.

MR. THATCHER: Yes. I would like to remind the Utah Water Pollution Control Board that they will have a luncheon meeting in the dining room over in the Student Union Building, immediately.

MR. STEIN: We stand recessed until 1:30.

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MR. STEIN: May we reconvene? The Conference is again in session. I think the record should state that the representative from Wyoming is not here, but we expect him very shortly, and will announce it when he arrives, for purposes of the record. Mr. Thatcher, will you resume?

MR. THATCHER: Thank you, Mr. Stein. Next, we will ask if the Sego Milk Products Company of Richmond is represented, and if they have a statement. Apparently not. The Rocky Mountain Dairy Products Company, Smithfield -- do they have a representative here? Apparently not. The California Packing Company -- I think we have Mr. Hageman here, representing them. Would you care to come up and make a statement, Mr. Hageman?

MR. HAGEMAN: No, I have no prepared statement.

MR. THATCHER: Thank you, sir. Hunt Foods, of Tremonton, Utah --

are they represented? The University of Utah? I believe Dr. Alton designated Professor Borg as their spokesman. He is a member of the Water Pollution Control Board. Do you have a particular statement, Professor Borg?

PROFESSOR BORG: No, I do not.

MR. THATCHER: Brigham Young University -- are they represented? Utah Manufacturers' Association? Utah Canners' Association -- Mr. Cahill was the representative we had listed for them. Is he here? White's Trout Farm, at Paradise?

MR. WHITE: I am Clark White, and I have no statement.

MR. THATCHER: Thank you, Mr. White. We also have listed the American Dairy Association of Utah. Mr. Welby Young is president of that group. He is also a member of the Water Pollution Control Board. Do you have a statement? Mr. John Ward, of Salt Lake City? The Utah Farmers' Union? Utah State Fish and Game Department -- I believe we have a representative here. Do you have a statement?

MR. STEIN: Let the record show that the representative from Wyoming is in attendance now.

MR. THATCHER: The Utah State Department of Agriculture? Utah State Engineer, Mr. Mayo?

MR. MAYO: The Utah State Engineer's office has no prepared statement.

MR. THATCHER: Thank you, Mr. Mayo. Utah Water and Power Board?

MR. BARNES: We are represented, but we have no prepared statement.

MR. THATCHER: Thank you, Mr. Barnes. Mr. Merrill Petersen, Chairman of the Sewer and Sanitation Committee of Cache Chamber of Commerce -- Mr. Petersen.

MR. PETERSEN: Mr. Chairman, ladies and gentlemen, I would like to say a few words. First, this is not as bad as it appears to be, as far as representation is concerned, because our Chamber of Commerce has signed pledges from the following groups to support the interstate water pollution program: Cache Chamber of Commerce, Logan Junior Chamber of Commerce, Cache County Commission, Box Elder County Commission, Associated Civic Groups of Northern Utah, Bear River Valley Chamber of Commerce, Fremonton Junior Chamber of Commerce, Hyrum Junior Chamber of Commerce, Cache Mayors Organization, Logan City Commission, Tremonton City Commission, Brigham City Commission, Logan Rotary Club, Brigham Rotary Club, Fremonton Lions Club, Richmond Lions Club, Paradise Lions Club, Trenton Lions Club, Tremonton Kiwanis Club, Logan Wildlife Federation, Logan Business and Professional Women, Seroptomists Club of Logan, Tremonton Women's and Civic Groups, Logan City Council of Parents and Teachers Association, Cache County Farmers Union, Box Elder County School District, American Legion Post No.47, Box Elder Order of Eagles, Auxiliary 2919, Hyrum Dam Improvement Committee, and Richmond City Commission.

I am sure we still have the support of these groups, because to date we have had no retraction from pledges they have given us since we started to fight for this.

I would like to say this about pollution conditions in the valley. Only the major sources of pollution have been touched on by these gentlemen from the Public Health Service and the Water Pollution Control Board of the State of Utah. We employed a photographer to take pictures of the conditions in the valley. We figured that the one big problem we had was to let the public know just what conditions exist. We felt that the best way to put this story across was to make a film and show it to the people. We showed the film to between seven and eight thousand people, by actual count. We have also taken many slides, so we have photographic evidence of many, many sources of pollution that are not shown by the Public Health Service or the Water Pollution Control Board.

We did find this. Without exception -- we did not find one single exception in this valley or in Franklin County -- where there was industry with industrial run-off, that was not drained directly into our streams. We found that practically all of the dump grounds in this county, and in many of the other counties around, were located either right on the edge of streams, dumped right into the streams themselves, or dumped into lower areas or sloughs where the streams got the full benefit during seasons of high run-off in the spring and winter seasons. This was true not only in Utah, but on up the Bear River. We feel that there is a real need for a program of this kind because of the big industrial program that is expanding up around Soda Springs. That area, as most of you are aware, has most of the phosphate in the country, and there are already five or six tremendous phosphate works in that area to date. Several time they have dumped pollution into the streams to the extent that it has killed all the fish, probably as far down as Alexander Dam.

This is the extent of my statement, but I would appreciate it if the chair would recognize Attorney George Preston, who is a member of our committee, and give him a chance to say a few words.

MR. STEIN: We surely will, Mr. Petersen.

MR. PETERSEN: Mr. Stein, I do want to make just one more statement as to the stand of our Cache Chamber of Commerce. We are interested in industry in the valley. We want all of the right type of industry we can get, but we do not want it at the expense of the pollution of our streams, as it has been in the past. We feel that the proper handling of pollution of industrial run-off is just as legitimate a part of the expense of doing business as labor, materials, or anything else. That is the stand we have taken in the Chamber.

MR. STEIN: Thank you. I would like to make one point clear. As far as the Public Health Service is concerned as a representative of the Federal Government, we have jurisdiction only over pollution from one State affecting health or welfare of persons in another State. Therefore, in this immediate area, we have jurisdiction under the Federal law only of these sources in Idaho. Now it is, and has been, our consistent policy when we enter a pollution case to cover every source of pollution, large and small; and I think if you will examine our presentation here today covering the sources in Idaho, we have covered every source in Idaho. Of course, we did generalize when we dealt with the pollution load in Utah, since that is outside our jurisdiction. We covered the main sources, since we had to relate the composite effect of both Idaho and Utah sources on the total effect in the stream.

Before you leave, let's see if we have any other comment or question. Mr. Green?

MR. GREEN: I am personally unacquainted with the location of the Soda Spring area, and Alexander Dam. Could somebody clarify this for me?

MR. PETERSEN: Five or six miles below Soda Springs, on the Bear River.

MR. STEIN: How about Alexander Dam?

MR. PETERSEN: I couldn't answer you, Mr. Stein. It came to me through the sportsmen up there. In fact, I have letters signed by numbers of sportsmen regarding pollution dumped into the stream where it has killed thousands of fish.

MR. ANDERSON: Could I comment on that, briefly?

MR. STEIN: Yes.

MR. ANDERSON: It was alleged that the waste from this pond killed the fish. We in our Department did a rather extensive investigation as to the quality of the water, and were unable to demonstrate a source of toxic material from this specific source. However, there was no doubt about a fish kill, and it did occur in this particular area. I would like to ask, if I might, Mr. Burkhardt of our Department to comment on that, since he did some of the study on it.

MR. STEIN: Would you want to wait until your presentation? I would like to clarify one other point, if I might. You talk about dumps. Do you mean municipal dumps, where they collect municipal trash and refuse, and then pile that up right next to a water course?

MR. PETERSEN: I do, Mr. Stein. Many of the dumps are directly into the water. The Logan City Dump is located right at Spring Creek, where there are many second feet of water running out from under it, and many of the other dumps in the valley are right directly into the water. One of the State sanitarians and I were taking pictures one day and we ran onto one of the town's dumps where there was a dead cow and a whole load of dead turkeys that had been dumped right into the Bear River. Some of the tributaries that run into the Bear River have dumps directly into the water. In one of the clean streams in the south end of the valley, which is a good trout stream, they have been backing up to a cut-bank and dumping rubbish and garbage of the town right into the stream. That condition exists all over the valley, not only over this valley, but over some of the areas in Idaho also. We have many photographs of this in slides and in films, and will be very glad to show them to any group.

MR. STEIN: What eventually happens to this trash? Does it get swept into the stream, and swept down?

MR. PETERSEN: In some places, yes.

MR. STEIN: Thank you, Mr. Petersen. Mr. Preston, would you come forward now for your statement?

MR. PRESTON: Mr. Stein, and associates. I hope you will pardon my slight throat infection.

I am not as liberal in excusing the officials of these communities concerned, as is Mr. Petersen. I can't forgive as easily, a lackadaisical attitude to a condition on which we have freely worked as public citizens, shall I say purposely avoid the finger of accusation that this committee has pointed at them. I think they have a duty to be right here. So much for that.

It is in view of the statement that you have made, Murray, and you made it two years ago, that I want to address most of my remarks. That is the responsibility of individual municipalities and individual public officials to sweep their own dooryard. That is the condition we have in Utah because your jurisdiction ceases when you have reached the Idaho state line, but you have been a tremendous influence, and we have nothing but commendation for the work you have done. It has been wonderful, and it has been a wonderful assistance to our committee.

The whole snowball was started by the thunderous voice of Bud Petersen years ago; that is,locally,until it has reached this present stage, and it came about because he had no means of curing a sewerage system in his own back yard, by means of cesspools and tanks. And from that pressure on Logan City to put a sewer in the south side of the city, has grown this organization, on which we certainly compliment you people, and hope that it may continue. I have observed (and in saying this, I don't mean that you have not done all your job; I think you have) that there is a large segment of the medical profession engaged in surgery. That is, removal of the cancer after the sickness has occurred. There is another large segment of the profession that is engaged in preventive medicine, and that is what we hope this will be in the future.

I call attention only as a reminder, the communities north of Preston. Maybe you have not reached them yet -- Montpelier, Soda Springs, Grace, and Evanston. To the observer of a map, you gentlemen who live outside this area, you will observe that there is absolutely no connection between Bear Lake and Bear River. Historically, naturally, and geographically, this is so. But years ago, the Utah Power and Light, through the ingenuity of its engineers, saw the closeness between the running body and the lake, and devised a scheme by which it could convert Bear Lake into a combination pleasure resort, an assist to agriculture, and an aid to the manufacture of electricity. I say this in anticipating the future, that those communities, and the growth of Wyoming within the watershed of Bear River, could very well create in Bear Lake what my friend Vanez Wilson has said has become of the north end of the Great Salt Lake. That is perfectly possible. And looking toward the future -- you see, you gentlemen who live outside the intermountain west -- by the construction of a canal between Bear River and Bear Lake, a distance of seven or eight miles, the early water run-off is diverted from the natural channel into the natural storage pond of Bear Lake. Therefore, a growth in the eastern reaches of Bear River could result in a fatal contamination to Bear Lake. That is why I remind you that preventive medicine is better than surgery.

Now in conclusion, let me say this. We have been condemned in our work on the committee by farming groups. We have been condemned by manufacturing groups. We have been condemned by other groups, because of the possibility of immediately touching the pocketbook. It has not been a happy lot. We have been individually criticized, and you gentlemen should know that to live in this community as a business man and a lawyer, one needs many farmers as clients and customers! But so long as we have the backing of the Chamber of Commerce, we won't, with the consent of the Chairman, quit, and we say to you gentlemen earnestly that you may call on us for any work, investigation, collection of evidence that you need and we can within our small mental capacities provide. If the Chamber of Commerce fires us, we'll get another sponsor!

(Applause)

MR. STEIN: Are there any questions or comments? Thank you for some very excellent comments, Mr. Preston. I think, from the outside of this wonderful and lovely area, we all realize the tremendous potential you have here in water resource development. I think this is one of the most intriguing things about this situation, and something that makes us so enthusiastic about the case. It is very different than some of the other pollution cases we have been in, where it was just a question of dealing with an utterly disgraceful situation which you could just hope to ameliorate somewhat. If the people could only see the degradation of streams, water courses and other waters in other areas of the country, and realize the priceless resource you have here, I think you would make a cooperative effort to protect it. And again, we are very appreciative for having that statement.

MR. PRESTON: May I say just one thing more, Murray, that I forgot?

MR. STEIN: Yes, Mr. Preston.

MR. PRESTON: There has been a great deal of emphasis on the work of this organization, but I just want to say this. I am not talking to you now; I am talking to these people back here. The work you are doing should in no manner excuse the work of the civilian authorities of the State of Utah -- prosecutors, Attorneys General, and others -- because individual cases up the streams indicate a violation of State statutes, or municipal ordinances, which cannot and should not be thrust on this committee. And they should not relieve themselves of the responsibility, because of the work that you are doing.

(Applause)

MR. STEIN: Thank you. Mr. Thatcher?

MR. THATCHER: We will continue with representatives of the various groups interested. Is there someone here representing Utah Power and Light Company?

(From audience): We have no statement to make.

MR. THATCHER: No statement. Thank you very much. Utah Water Users' Association? Mr. Tom Jensen, or any of his representatives? Apparently he has left. Utah Mining Association? Mr. Miles Romney, who is a member of the Utah Water Pollution Control Board, usually represents that group, but he was unable to be here; he was out of the State. Dr. Arden Goffen -- is he here? Is there a representative of the Board of County Commissioners of Cache County? Apparently not. The Board of County Commissioners of Box Elder County?

MR. POTTER: I am a member of the Box Elder County Board of Commissioners, but we have no statement to make.

MR. THATCHER: Thank you very much. Board of County Commissioners of Rich County? Apparently not. Is there a representative of the Farm Bureau Federation? Utah State Farm Bureau? Apparently they have left. Utah Oil and Gas Conservation Commission? Utah State Land Board? We had a representative here this morning. Is he still here? Apparently not. Utah State Industrial Commission? Mr. Nelson was here.

MR. NELSON: I am Mr. Casper Nelson, representing the Utah State Industrial Commission. We have no statement to make.

MR. THATCHER: Thank you, Mr. Nelson. Utah State Publicity Department? Utah Municipal League? Is Mr. McCoy, or any of his staff here? Utah State Association of County Officials? Union Pacific Railroad Company?

MR. GUSTIN: M. W. Gustin, representing the Union Pacific Railroad Company -- no statement.

MR. THATCHER: Associated Civic Clubs of Northern Utah? I believe last year you represented them, Mr. Petersen. Is that true again this year?

MR. PETERSEN: I have them on my list, and they have not withdrawn their support.

MR. THATCHER: Thank you. Rocky Mountain Trout Growers? Mr.

White, are you a member of that group?

MR. WHITE: Yes, sir. I have no statement for the group.

MR. THATCHER: We have representatives here from the League of Women Voters. We would like to ask them to make a statement, if they care to.

MRS. PORTER: The League of Women Voters of Utah is interested in the role of the Government in water resource development; however, we do not have a statement to make.

MR. THATCHER: Thank you, Mrs. Porter. Are there others from Utah who have an interest in making a statement here, that I might have missed -- either from industry, or civic groups, counties, or cities? If not, that concludes our list of invitees, Mr. Chairman.

MR. STEIN: Let us see if there are any questions from anyone now, at the conclusion of your presentation.

MR. ANDERSON: I would like to ask Mr. Thatcher one question. It seems in the discussion this morning that the City of Preston was mentioned to a considerable extent, and the fact that they have a primary treatment plant, which we know is overloaded. I would like to ask Mr. Thatcher -- in the number of cities he gave here, what percentage have sewage treatment?

MR. THATCHER: Do you mean the ones that I called on this morning?

MR. ANDERSON: Yes. Just roughly, what is the picture? Do they all have adequate treatment?

MR. THATCHER: I believe I am correct in saying that none of them have treatment facilities. I would like to call on some members of the staff to check this, however. Is that correct, Cal?

MR. SUDWEEKS: Yes, that is correct. None of them have treatment facilities.

MR. ANDERSON: Thank you.

MR. STEIN: Do you want to say something, Mr. Petersen? Come right up.

MR. PETERSEN: I would like to say this about the Preston sewage disposal plant. In the first place, it is a primary plant, and in the second place, they are not even using it as a primary plant should be used. One of the State sanitary engineers and myself had the good fortune, I guess you would call it, of coming into the plant at the time they were uncapping their pipes off their sludge tanks. As you are all aware, a primary plant is one where they drain the effluents directly into the streams and they handle the sludge through tanks. They are left in the tanks for a few days, where they heat, and then are drawn off into evaporation vats, where they evaporate. The plant at Preston has not been used the way it should be used for a long time, because we have kept pretty close track of it. The day we came up there, they had uncapped the pipes and were draining the black sludge that was so thick it would hardly run, directly into Worm Creek, and the stream for a long distance below was just as black as it could possibly be. So, as far as being a pollution abatement factor, the plant at Preston is of absolutely no value. Thank you.

MR. THATCHER: Mr. Chairman, as we pointed out at the First Session, we felt it was important for everyone to understand that the Utah Board was not necessarily pointing a finger at Idaho alone in this proceeding. We are well aware that we have a lot of progress to make on our own, and are perfectly willing to assume that obligation, and will make the corrections as fast as we can. We did not want Idaho to think we were singling them out as the culprit in this case.

MR. STEIN: Does that conclude your presentation, Mr. Thatcher?

MR. THATCHER: Yes, it does.

MR. STEIN: At this point then, we would like to call on Mr. Anderson, of Idaho, for the statement of the State of Idaho, and for Mr. Anderson to call on his invitees to the conference. Mr. Vaughn Anderson is Chief Engineer and head of the Sanitation Section of the Idaho Department of Health.

MR. ANDERSON: Thank you, Mr. Chairman.

For background information, we would like to discuss briefly the water pollution control situation in Idaho before we discuss the Bear River problems specifically. The Idaho Department of Health has for many years been engaged in some phases of a water pollution control program; however, it was not until May 11, 1959, that the Idaho Board of Health, under general authority granted in recent legislation, adopted an official policy and regulations covering this field. Because our personnel resources are definitely limited, we have chosen in the initial stages of our program to select specific areas which appear to be acute and exert our greatest efforts in these acute areas. Our approach has been to obtain data on stream quality and on the nature, strength and volume of each specific waste discharged to the stream. After this information is obtained, we determine in our best judgment, the extent of treatment necessary for each specific waste, and to make specific recommendations to each contributor. Those responsible for pollution are asked to furnish us with a time table for meeting our recommendations. At intervals, public meetings and hearings are held to aid us in determining progress in abatement, as well as the effectiveness of abatement procedures.

Because of the lack of enforcement authority prior to the recent inauguration of our abatement program, we had a significant number of communities which had not provided sewage treatment. Therefore, in addition to our critical area work, we are endeavoring to bring about effective sewage treatment in all of our communities as rapidly as we are able.

In the matter of critical area activities, we have completed studies and are working on abatement programs in the Minidoka Irrigation District Main Drain located in Minidoka County, on Indian Creek in Canyon County and on Rock Creek in Twin Falls County. Additional reports are in the process of being prepared for the lower Boise River, and we are beginning studies on two sections of the Snake River; that is, in the Idaho Falls-Blackfoot area and the Burley-Twin Falls area.

We have not, under our present program, made an intensified study or attempted an abatement program specifically related to the lower Bear River area. Our Department has previously cooperated in a joint study in this area and considerable information is available to us in this matter. While this area would probably be considered as a critical area, and placed rather high on our priority list for study, we have been reluctant to attempt an abatement program until such time as we have definite information on any requirements the State of Utah would have on waters entering that State from Idaho. We are aware in a general way of the classification plan under which the Utah Water Pollution Control Board plans to operate. However, we have been unable to determine a logical approach to an abatement procedure in the absence of specific classification of the waters of the Bear River, with the realization that we are faced with the probable adoption of such a classification in the near future. We will expect to apply our own regulations within our own borders; we do feel, however, under the present situation, that it would be unreasonable for us to proceed blindly with our own program without consideration for the requirements of the State of Utah.

The most logical approach to this problem, as we see it, would be for the State of Utah to inform us of their classification and the specific requirements under this classification for these waters. We would then study these requirements to determine whether or not we felt that they were reasonable. If we felt they were reasonable, we would be in a position to instigate an abatement program aimed at meeting both the requirements of the State of Utah and the State of Idaho.

It might be well for us to mention that the Cities of Montpelier and Soda Springs have recently voted bond issues for the construction of primary treatment plants, and these plants will be completed within the near future. The Village of Grace has installed a secondary treatment plant which is in operation. The City of Malad is making provisions for the discharge of its sewage to an oxidation pond and eliminate its outfall to the Malad River. We realize, however, that action taken by these communities would have only a minor effect on the Bear River in the vicinity of the Idaho-Utah border.

It is our feeling that any further activities in this area will of necessity be delayed until more definite goals and requirements are established by the State of Utah.

I would like to mention that we have found the city officials in Idaho to be very cooperative in carrying out this program. As I said, we have not attempted to obtain any kind of significant change in the Preston plant until we had the guidance as to what may be expected from us in Utah. The cities up the line have all taken action, and I think the city officials have done a really good job in promoting sewage treatment in their towns. Idaho requires a two-thirds vote to pass any bond issue to build this kind of material, and this takes a lot of effort on the part of city officials to bring about a two-thirds favorable vote. We have found we do not do this by screaming at them.

That is the end of my statement, Mr. Chairman.

NOTE: (A status report on sewage treatment facilities in the State of Idaho as of March, 1960, was submitted to the Conference, and is included in this report as Appendix B.)

MR. STEIN: Do you have any comment or question, Mr. Thatcher?

MR. THATCHER: One question I would like to ask Mr. Anderson. I wonder if we can assume that this meeting today has served the purpose of advising Idaho as to Utah's intent with respect to the standards of quality of waters between Utah and Idaho.

MR. ANDERSON: Yes, I think it does give us an indication, if this is the way the Conference goes, of the time when you will probably have these things.

MR. THATCHER: I was thinking as to whether our statement was adequate. We indicated there what classifications we proposed for all of these streams, and if you will accept this, fine; if you want something more, we will be happy to provide it.

MR. ANDERSON: Well, I think this would be good guidance, Mr. Thatcher, but since they are tentative, is it possible that they will be altered when you adopt them? I think this question would have to be faced, and I know this cannot be answered --

MR. THATCHER: I will say that they are not as of now officially adopted, but the Board intends to proceed immediately with that procedure of adoption.

MR. ANDERSON: I think this is a clearer picture than we have had in the past, Mr. Thatcher.

MR. STEIN: Do you have any questions, Mr. Nasi?

MR. NASI: No, but I would comment that it would certainly provide the State of Idaho with a basis upon which to initiate a further study on their part with respect to the requirements of Preston and other agencies in the State of Idaho.

MR. STEIN: Mr. Green?

MR. GREEN: I have no comments.

MR. STEIN: Mr. Anderson, if we assume that these proposed classifications will be adopted, would you say that this would be satisfactory to Idaho?

MR. ANDERSON: I don't believe I can answer that question at the present time, since this is the first time I have seen these classifications -- well, I have seen the classifications -- but without studying them, I think we will have to examine them and compare them with our problems, and I don't think I can do that right at this time.

MR. STEIN: When you speak in terms of the two-thirds vote, are you talking about a general obligation bond?

MR. ANDERSON: I'm talking about any kind of a bond which our cities may legally vote.

MR. STEIN: How about a revenue bond?

MR. ANDERSON: Two-thirds.

MR. STEIN: Thank you.

MR. ANDERSON: There are some other people here from Idaho. If there are no other questions, I would like to ask if there is a representative here from the Franklin Sugar Company? The gentleman from Cal Pack? Would you have anything to say from the Idaho side of this thing? You are on both sides! Thank you.

(From audience): We have no prepared statement.

MR. ANDERSON: How about the Idaho Fish and Game Department? The Department of Reclamation? I know we have some representatives here from the City of Preston. Mayor Webb, would you care to make a statement?

MAYOR WEBB: We have no prepared statement to make at this time.

MR. ANDERSON: How about the City of Malad? Soda Springs? The Village of Grace? City of Montpelier? Any County Commissioners from Franklin County? Bear Lake County? Oneida? Caribou? Would anyone from Idaho have a statement to make? Yes, sir -- would you give the Chairman your name, please.

MR. HAMMOND: Mr. Chairman, I am Mark Hammond, of the Preston City Council. I feel I should challenge the statement of Mr. Petersen in his quotation of making the absurd statement that the Preston plant is of no value. Now, of course, we feel that after spending some one hundred fifty or two hundred thousand dollars, we do have a value there, and a plant which does, of course, need some remedial features. In regard to the figures that have been presented, I noticed the percentages. When you talk about no value on pollution, certain factors of the figures presented show us that there is quite a value, that the percentages in many instances as regards the Preston plant and the pollution was quite low. These factors, I think, should be taken into consideration.

We do feel that we need some work done, and we need to clean up the situation to quite an extent. This I am sure our community and our people will support when that time comes, and we realize that there are many, many communities on the Bear River that need cleaning up, and I am sure that we will go along with them. But first, we need a wholehearted effort at cleaning up the Bear River. Thank you.

MR. ANDERSON: Thank you, Mr. Hammond. Is there anybody else from Idaho who would like to make a statement? If not,that concludes my statement, Mr. Chairman.

MR. STEIN: Are there any questions or comments on Idaho's presentation? Did you want the floor again,Mr.Petersen -- come ahead.

MR. PETERSEN: My face is red, folks, because of this. Logan is, I guess, the biggest single contributor to the pollution of the entire Bear River. We got the city to put on one bond issue. We were beaten. We were beaten because the City Commission was against it. They confused another issue with it, and they didn't want to do it, and it was defeated. There was one thing that was revealing. Just a short time ago, the Junior Chamber of Commerce conducted a poll to find out just what kind of recreational facilities the City of Logan should have. Almost every questionnaire that came back -- 80% or more came in, and even though sanitation factors were not mentioned in the questionnaire,they mentioned the fact that Logan needed a sewage disposal plant.

The Chamber of Commerce has done everything in its power to clean up the town,through the City Commission and the County Commission. We have had very little response. If we could get a little bit of help and pressure from the State level,I am sure we could accomplish this, but up to now we have been unable to do anything. We have put in a recommendation not once,but many times, for localized sanitary landfill of garbage and rubbish areas. When the U. S. Public Health Service made the survey of the valley here last summer or the summer before, they spent a lot of time and a lot of money, and that was one of their recommendations, to put in sanitary landfill areas.

The Cache Chamber of Commerce and the Logan Junior Chamber of Commerce has recently again requested the City to put the sewage disposal plant to a bond vote. Whether we will have any luck, I don't know -- but I guess I should not have pointed an accusing finger at Preston, when Logan is the biggest contributor of pollution on the entire Bear River!

(Applause)

MR. STEIN: Mr. Green, did you want to make the presentation for Wyoming?

MR. GREEN: First of all, I would like to recall our original statements that we felt Wyoming was not concerned in any interstate pollution. I believe this was reiterated by Mr. Long. We are extremely gratified in the thinking of the Public Health Service in that feeling. I can sympathize very heartily with Mr. Anderson. Inadvertently, the period through which this study has been carried out has cost us some time in Wyoming. We have gone ahead with our own pollution program, and I have no intention of rehashing the entire program, or what we have accomplished, except in the direct vicinity of Evanston.

As was mentioned, Evanston has a primary sewage treatment plant. There are many things wrong with that plant. Unfortunately, until we had heard from our friend in Utah today, we were unable to proceed any further with the City. We had no idea whatever as to what demands might or might not be made. Now, I am sure we are going to consider this an interior problem. We are not happy with the degree of treatment at Evanston. Certain other changes must be made. However, we can now go ahead.

Insofar as industrial pollution is concerned, I am very much of the opinion that that has been completely cleared up since the November 1959 inspection. The Union Pacific Railroad Company has gone ahead and either treated or completely retained on land all wastes which it had previously been discharging.

There are undoubtedly some minor sources of pollution on the Bear River which we will pick up from time to time through the services of our General Sanitation Section. I am thinking primarily of an occasional septic tank on a ranch, running down into something or other: however, that will be picked up.

Our other major problem is that of salinization of the river, and at this time I have no knowledge of what might or might not be done. I do not believe that the science and art of sanitary engineering has progressed to that point.

Another question that was brought up, and I would like to allay a fear that was expressed of the Bear Lake being adversely affected by discharges from Wyoming. I am quite sure we can promise you very definitely and very flatly now, that there will be no damage to the Bear Lake. It's not that we care so much for you, but our citizens in Wyoming are very, very selfish. They insist -- and I mean literally insist -- on the true multiple-use doctrine of water supply in our waters. Our Game and Fish Department feels that the Bear River can maintain a trout fishery, and I believe that if we maintain a trout fishery there, you will have no trouble whatsoever in Bear Lake.

The other remarks, I believe might best be made by two of our other representatives here. I would like to introduce them. Mr. Frank Long, who was introduced earlier as a member of the Presidential Board, is the Chairman of our Wyoming Water Pollution Control Advisory Council. Frank, do you have anything you wish to say?

MR. LONG: As I said before, I am very happy to be here, and along with representing the United States Government, I also represent Wyoming, but today I am representing the United States Government. From Wyoming, we have two other representatives: our sanitary engineer, Dave Green, and another member of our Wyoming Council, Mr. Christiansen, from Evanston, Wyoming. Chris, will you please stand up? Since we are having a meeting on the Bear River, and Chris lives in Evanston, we know that he will be looking after the interests of Wyoming and all the other States adjoining us.

MR. GREEN: Murray, I wonder if you would be so kind as to recognize Mr. Christiansen. I believe he might be able to make a couple of remarks on the plans of the City of Evanston for further sewage treatment.

MR. STEIN: Mr. Christiansen, would you want to come up and make a statement?

MR. CHRISTIANSEN: I am S. A. Christiansen, member of the Wyoming Pollution Control Advisory Council. My home is at Evanston, Wyoming, and I have been there for some forty years. I expect to be there for another forty years, but that is, of course, beside the point. Some twenty years ago, in recognition of the condition which existed at Evanston, we did construct a plant to take care of our pollution, and we rather thought that we had done a bang-up job. We had spent some seventy-five or eighty thousand dollars, and I am sorry to find that we got caught up there when Mr. Kittrell made the remark that the plant was not in operation. I did discover that we did have a break-down, which will happen to any plant, politically or otherwise. I can assure you that the plant is in operation today, and that it will be in operation from now on.

I realize that some reform must be made. We have got some work to do on that plant, and it will be done. I have the assurance from the City Council that we will make some improvements. It is my personal opinion that we will abandon the plant, be that as it may. We feel, of course, that we have a lot of money invested. It costs $5,000 a year to operate the plant, just for operational expense; and when you say we will throw this plant away, and we are going to put up a new one, the tax payers are very reluctant to go along with you, and I presume it is no different in Idaho than it is with us. But I can assure you that today you can take a drink out of the Bear River right below the disposal plant,and we do not discharge any sewage directly into the river. That statement is erroneous. We do not.

MR. GREEN: I believe Mr. Christiansen has given us a far better picture of the local situation than I could. I have not been in Evanston for several months. I would like to point out, though, that our Game and Fish Commission has just completed a very brief study or survey, and were unable to find any deleterious discharges to the stream in the Evanston area.

MR. STEIN: Mr. Green, though the sewage plant may break down occasionally, to the everlasting glory of Evanston, at least when I have been there, the establishments that serve refreshments never seem to break down!

MR. GREEN: I would like to make one comment, which I do not believe is out of line at this meeting. It does not directly concern us, or perhaps it does. As I mentioned before, the major problem seems to be between the States of Idaho and Utah, and it is our feeling -- at least, the members of the Pollution Board and myself -- that this could best be solved by, I suppose you could almost call it a cooperative venture, between the two States, something like equal procedure at the same time. Personally, I am a strong believer in the "clean hands" doctrine. I was very surprised to hear that the State of Utah came to the meeting with, shall we say, not quite clean hands, at least, and I would feel that in all justice to the State of Idaho that the Utah people should go along at least at the same pace that the Idaho people are being requested to make at this meeting. That is all I have to say. Thank you.

MR. STEIN: Are there any further questions or comments?

MR. NASI: I have a note which was passed to me by one of the Public Health Service observers, concerning the chemical plant near Randolph, Utah, but in Wyoming. Do you know, Mr. Green, whether the --

MR. GREEN: Yes, the I. H. engineer checked that one out, and there is no discharge to the river.

MR. NASI: There is no discharge from that plant. This is a phosphate ore upgrading plant?

MR. GREEN: Yes, that is the one.

MR. STEIN: Do you have any further questions or comments?

MR. ANDERSON: It just occurred to me that I might have overlooked one thing. I believe there is a Bear River Interstate Compact, and I wonder if they might have representation here, and if they should be called on.

MR. STEIN: We would be glad to hear from them. Are there any representatives of the Bear River Interstate Compact here?

MR. SMOOT: I am Mr. A. V. Smoot. I am on the Utah Commission, but I don't believe we have any statement to make at this time.

MR. STEIN: Thank you. Mr. Green, do you have anyone else?

MR. GREEN: As far as I know,there are no other representatives of Wyoming industries or municipalities or government. If I am incorrect, would you be kind enough to let me know. Apparently there are none, Murray.

MR. STEIN: Then we shall proceed with the discussion now. Does anyone here feel that there has been some fact that he is aware of that the Conferees should know before we proceed discussing the matter? If not,I think we can pretty well come toward a fairly rapid conclusion.

Let's try to get one thing settled,and for that we shall call on Mr. Kittrell. Is it the consensus that there is no interstate pollution prlblem in the Evanston area at the present time?

MR. KITTRELL: As you will recall, in my report we concluded that there was none from Evanston. We were not quite sure of the irrigation return water possibilities. There is a definite increase in mineralization of the Bear River from above Evanston to the Utah-Wyoming state line. We were not able to determine where the increase in mineralization comes from.

MR. STEIN: Thank you.

I think we covered a good portion of this ground at the First Session of the conference, and while some of it bears repeating, we have substantially the same conclusions.

I think it is pretty clear that the Bear River is an interstate stream within the meaning of the Federal Water Pollution Control Act.

I think also, that the Cub River and Worm Creek are interstate streams within the meaning of the Federal Act, since they both cross state lines.

I think it has been established by the data presented here that pollution of interstate waters subject to abatement under the Federal Water Pollution Control Act is occurring in the Bear River and in its tributaries the Cub River and Worm Creek, as they flow from Idaho to Utah.Municipal and industrial wastes from Preston,Idaho, the Franklin

Sugar Company at Whitney, Idaho; the California Packing Company at Franklin, Idaho, are finding their way into the waters of the Bear River; and combine with wastes from the Amalgamated Sugar Company at Lewiston,Utah,the Cache Valley Creamery at Lewiston, Utah; Lewiston, Utah Community: the Sego Milk Company at Richmond,Utah; California Packing Company and Rocky Mountain Dairy Company at Smithfield,Utah; California Packing Company, E. A. Miller Packing Company, and L. L. Miller Packing Company, and the Morning Milk Company at Wellsville, Utah; the Community of Wellsville, Utah; and the City of Logan,Utah.

This combined pollution seriously deteriorates the quality of these waters so as to downgrade their use for irrigation and for stock-watering so as to cause a possible health hazard; deteriorates water quality so as to interfere with aquatic life and wildlife; deteriorates water quality so as to interfere with the Cache River Basin as a recreational area; and deteriorates water quality so as to make the river unsuitable as a potential source of public water supply.

I think the Conferees have pretty much agreed that the State of Utah has sufficient data on which to base a classification of its streams. I think the Conferees again are agreed that the State of Utah should proceed with that classification as rapidly as possible.

Once that classification is achieved, I think that both Utah and Idaho should see that their industries and municipalities provide sewage treatment, so that the water will be suitable for the variety of purposes we have indicated above, and so that the pollution in one State will not interfere with legitimate water uses in another State. However, the downstream State obviously should approach this with clean hands, and provide its own treatment.

What we now have to do is think in terms of a possible time schedule, because the Surgeon General will be faced with this when we get back home. I don't know whether any consideration has been given to that. When does the beet sugar season start -- in October, or November, would you say?

(From audience): About the fifth of October.

MR. STEIN: In determining the problem from sugar beet mills, is it at all realistic to expect that remedial facilities will be in by this October? I doubt it, considering the classifications. What would you say on that?

MR. THATCHER: The only schedule that the Utah Board felt they could logically present at this time was the one that was in our statement this morning. I agree with your present statement. I don't think it is realistic to --

MR. STEIN: Well, when would you expect remedial measures to be put into effect?

MR. THATCHER: Our Board did not feel, in discussing that problem, that they were in any position to pinpoint the time of completion of remedial measures. They feel that as of now, all they could do was indicate when they felt they could proceed with adoption of the classifications. They also wanted to assure this meeting that they intend to proceed as expeditiously as possible with this entire problem, in going through to actual removal of the pollution, but we are not in a position at this time to go beyond the time schedule we quoted in our statement this morning.

MR. STEIN: I would like to propose this to both States. The first conference on this matter was held on October 8, 1958. Looking at the old reports, the Bear River has been surveyed for many years, so this is not a new problem. I would suggest that it would not be unreasonable to expect that remedial measures be instituted by the main sources of pollution here by October, 1961. That is, before the beginning of next year's beet processing season. That is well over a year. Do you people think that would be an unreasonable proposal?

MR. THATCHER: Would you make that statement again -- that remedial measures be taken --

MR. STEIN: That remedial measures would be instituted by October, 1961. That is, the beginning of the beet season.

MR. GORDON (from audience): I am Seth Gordon, of the Advisory Board. It seems to me that you have been kicking this subject around about long enough. There ought to be a target date set, and have it done by then, with no extensions. I would not say "initiate"; I would say "complete by" such and such a date.

MR. STEIN: Oh, wait, I'm sorry if I did not make that clear.

MR. GORDON: If the law permits --

MR. STEIN: The proposal I made was that the remedial measures be completed by that date. There is no point in using the beginning of a sugar campaign to initiate action. We have to have it completed, if it is going to take effect.

MR. GORDON: Set the target date and say "NO EXTENSIONS".

MR. STEIN: Well, we would like to have some discussion.

MR. ANDERSON: I'd like to discuss that point. I certainly would not be in a position to say that I would agree to a specific target date until we have established what is going to be required. Sometimes these things require a financing procedure that is as drawn out as the requirement of this ninety days that Lynn has mentioned for the holding of hearings. Sometimes a city may want to proceed as rapidly as possible, but there are certain time tables that they have to abide by; and until we know specifically what we are going to be expected to do, I could not agree to it.

MR. STEIN: We have two problems, and I think you have a good question there, Mr. Anderson. One, I think that at least with Utah, we have to proceed on the assumption that you are going to get a classification by a particular date. Now, I don't think the financing procedure deals with private industry; it just deals with the municipalities. Mr. Thatcher, you did give a date for classification of the streams, did you not? What date is that?

MR. THATCHER: I will read from the prepared statement that was adopted by the Board -- "Adoption of the proposed classifications will involve one public hearing on a change in standards for classification, and another on the actual assignment of classifications. It is anticipated that the hearing on standards can be held within ninety days, and that following their adoption, the hearing on classifications can be held within ninety days". I might point out that as far as the Utah Board is concerned, we have a specific law that specifies the procedure we follow. It would not make any difference what our desires are, we have to follow the procedure that is defined in the statutes.

MR. STEIN: _If_ you classify the streams. I can't read anything in the statutes that requires you to classify them.

MR. THATCHER: There, again, I must remind you as I have before, that we are bound to accept our legal advice from the Utah Attorney General, and he has so advised us.

MR. STEIN: That you must classify?

MR. THATCHER: Yes.

MR. STEIN: I have not seen that opinion, and as a matter of fact, I thought it went the other way.

MR. THATCHER: We had the Attorney General represented this morning. Apparently he is not here now. I realize that in the legal profession there are differences of opinion, but I think you realize that we must follow the opinion of our Attorney General.

MR. STEIN: I don't think we are arguing that at all. I think with the municipal case, if we can get back to that, we have a situation, as I see it, in Utah, dealing with the City of Preston. A representative of Preston has stated that the primary treatment plant seems to be overloaded. Mr. Kittrell, in his report, stated that the plant was not achieving a sufficient reduction in pollution, as measured by bacterial counts, to provide adequate treatment and non-pollution of water.

MR. THATCHER: Which plant?

MR. STEIN: The Preston plant. Isn't that correct?

MR. THATCHER· I don't think so. Did he say that? I didn't understand it that way.

MR. STEIN: Well, I think if we refer to Mr.Kittrell's report, and I didn't hear any questions on that.

MR. THATCHER: It was my understanding that at one sampling point in the State of Utah he showed points beyond our Class C and D limits. Is that right, Mr. Kittrell? There was one sampling point in Utah below the Preston plant that showed coliform counts below our Class C and Class D limits?

MR. KITTRELL: The station immediately below Preston showed four thousand, five hundred,which we know is below your standards for Class C or Class D water. As I pointed out in my report, it is not far enough downstream below Preston to permit full multiplication of bacteria that normally takes place in a stream, and that at the next station downstream, which was also below the Franklin Sugar Company, coliform in the stream was far above your standard. I attributed most of that to the Preston source.

MR. STEIN: I think in dealing with municipal plants, you do project to the future. With all deference to the classification, I don't know necessarily what the classification would have to do with immediately planning for municipal waste disposal in Preston, where we are dealing with bacterial contamination going out into Idaho and down into Utah. Now, if there are going to be improvements in the Preston plant, presumably, as with any city plant, there will be planning for the future and for growth. It seems to me that this could be considered to start almost immediately, just as a planning point. I don't know just what these improvements would require --

maybe improvements in the primary, or maybe installation of the secondary -- but it would seem that what we are going is giving eighteen months to effect improvements in the plant, and that seems to be a fairly reasonable time to proceed with a relatively small plant such as we have in Preston. Now, if I am mistaken on that --

MR. ANDERSON: Could I make a comment?

MR. STEIN: Certainly.

MR. ANDERSON: In the course of our discussion it was pointed out that we are not pointing the finger at Idaho; we are pointing out that we have a problem. According to Mr. Thatcher, there are a number of communities in this situation which have no treatment whatsoever. Now all of a sudden, when we get down to this point, we single out the City of Preston to set a deadline on, and we haven't yet gotten to the point where we are assured that there is going to be a classification of these particular things. I certainly cannot agree to set a deadline without our people having a chance to study these standards and how we might meet them, or the classifications, since we have not yet got them adopted.

MR. STEIN: All right. Now, let me again give you the Federal position, what we are charged by statute to consider and abate. The statute says, "pollution of interstate waters in or adjacent to any State, whether the matter causing or contributing to such pollution is discharged directly into such waters or reaches such waters after being discharged into the tributary of such waters, which endangers health or welfare of persons in a State other than that in which the discharge originates, shall be subject to abatement".

We regard classification, and I think the States do, as a tool which some States use, and some States don't. However, the Federal Act says nothing about classification. We have a statutory obligation to abate interstate pollution when it originates in one State and endangers the health or welfare of persons in another State. I think the facts here are abundantly clear. This is what is happening in the Bear River in the Idaho-Utah stretch. The obligation on us is to have that pollution abated, and to have it abated within a reasonable time.

The only reason we get into this discussion of the schedule is the portion of the Act which states, "If the Surgeon General believes, upon the conclusion of the conference or thereafter, that an effective program toward abatement of such pollution is not being made, and that the health or welfare of persons in a State other than that in which the discharge originates is being endangered, he shall recommend to the appropriate State water pollution control agency that it take remedial action. The Surgeon General is to allow at least six months for the taking of such action."

The Surgeon General is going to be faced with a statutory duty and a decision to make when we get back to Washington. The purpose of this discussion is to try to aid him in that decision, because whether we come up with this time schedule or not, the Surgeon General is going to have to make a determination. What I would like to elicit from you is a suitable proposal to bring back to him which you would find to be satisfactory.

MR. ANDERSON: I am in no position, without studying this further. I would like to point out some of my reasons for making this statement. Mr. Kittrell makes a statement that immediately below the Preston plant he got four thousand, five hundred; and then farther down he got in the hundred thousands MPN. He attributes this to a multiplication. This might not be the case. It might be from the sewage from the Franklin County workers -- is this not correct, Mr. Kittrell?

MR. KITTRELL: Yes.

MR. ANDERSON: Therefore, you are assuming that we have already established where this is coming from. I maintain we have not established it. Therefore, until we study this thing to find out what we have to meet here, I certainly will not on my behalf make a statement that we can say that Preston is going to do certain things. Mayor Webb, would you like to make a statement? Mr. Hammond?

MR. HAMMOND: Mr. Chairman, it is obvious to us that in making some sort of remedy to the situation in Preston, if it is possible through minor repair to meet these standards of water quality -- if that is possible, we might possibly meet a deadline like that. But if we have to bond the people of the Preston area to meet two or three or four hundred thousand dollars, and if that bond does not pass, what are you going to do with your deadline?

MR. STEIN: That is why we are here, and discussing it. I don't think this is a --

MR. HAMMOND: I ask that. Could we set a deadline in view of that fact?

MR. STEIN: I think, again, what we are dealing with here is that down below you, sir, are people. These people are entitled to have water of a quality that they can use for a variety of uses. We are trying to be reasonable on both sides, and set a deadline. Generally speaking, municipalities have been on top of the program -- on top of their problem. I can't make a judgment, and I don't think any of us can, but this is a job for the city and for private engineering, to determine the extent of the work you might need at Preston. Presumably, from what we have heard, and I think all hands might agree, this bears looking into. We are all hopeful that it can be very minor. No one wants to spend money unnecessarily on sewage treatment. We don't know, and in the absence of a statement from Preston or the State on what is needed, and what your proposals are, I think we have to proceed on certain assumptions.

MR. HAMMOND: I agree with that.

MR. STEIN: You are treating the wastes of a population of what -- about four thousand, now?

MR. HAMMOND: About thirty-six or thirty-eight hundred, yes.

MR. STEIN: Thirty-six to thirty-eight hundred. Well, I don't feel that I am an expert in evaluating changes in a plant which need to be made. You may have several problems. No, that was Evanston where they talked about abandoning the plant, but in the absence of that, it may not be quite as expensive as you might indicate.

MR. HAMMOND: I am saying that. That is my point. I am saying that at this point we don't know what the situation will require to meet the downstream standards. In view of that, I say again, how can we approach a deadline?

MR. STEIN: Sir, in all good will, I would like to just place this to you. The people who are closest to the Preston sewage are you, not these people in Utah downstream. You have bacteria going into the water, and sewage contaminated water below your city -- why do you want to wait for the Utah standards?

MR. HAMMOND: We don't want to wait for the Utah standards. That is not the point. But if you set a deadline, and our people won't go for a bond and we have to bond, what is going to happen to the deadline? That is my question.

MR. ANDERSON: Could I say something in here? And I would hope that this discussion does not lead to something which I am afraid it has, and for which I am very sorry if it has. We have found that by somebody putting the finger on city officials, and saying, "you must do this", all the city officials have to do is say that, and the bond issue is turned down. I am confident that the city officials of Preston and our Department can work together and solve this problem, if it is in fact the City of Preston's problem, and at least we can work out something that is satisfactory as far as the City of Preston is concerned. But as far as making a flat statement that we can do something by a certain time, I don't think we are in a position to do that.

MR. STEIN: Right. Let me point out, Mr. Anderson, that in this stage of the proceedings we are not making any requests or any demands of any kind on the city officials. We are dealing with the State. I want that perfectly clear. What the Surgeon General would be required to do would be to ask you, under your State law and procedure, to see that the clean-up or the abatement facilities are put into use by a particular time. The method whereby you use that is a matter of State law and procedure. This is not the Federal Government coming into the city, or telling the city anything in this stage of the procedure. I want you from Preston to be particularly clear on this point. The parties to this conference are the States and the Public Health Service, and any requests we make after this would be to the States.

MR. HAMMOND: I retire the floor to Mr. Anderson.

MR. STEIN: Thank you.

MR. PRESTON: Mr. Stein, may I say something which might help to clear this thing up?

MR. STEIN: Why don't you come up, Mr. Preston.

MR. PRESTON: Mr. Stein, I don't want to do all the talking today, but I think that two years ago and today the question of stream classification has obscured the issues before this body to the extent that there are some people back in the rear areas who are entirely confused, as I am.

Now I make this flat statement, Mr. Thatcher, with apologies to your Board and to Bill Sigler. The question of stream classification has not one single thing to do with the question of pollution. I repeat, the question of stream classification has not one single thing to do with pollution. It only has to do with how much pollution. Not pollution, but how much pollution.

I say that for this reason. Utah does not need to wait upon a classification of its streams to begin a campaign of erradication, by injunction or otherwise. They can commence today. It doesn't have to wait a year; it doesn't have to wait a week. It seems to me that that would answer part of Mr. Anderson's question. If, for instance, the Bear River at any given point had reached the classification desired by our own State Board, that cannot under any imagination mean that any single pollutor could continue to pollute the streams. It can't be that way, or this problem will never be solved.

Again I say we should not talk about stream classification, because that is only a rule of thumb by which the State Board will have to arrive at in Utah which will meet their minimum standards. And again I say that classification has nothing to do with pollution, but only the quantity of it, and I think we ought to start right now and say it doesn't matter whether it means Wyoming -- and they seem to have come out of this thing pretty clean! It doesn't mean Idaho. It means Idaho and Utah, and wherever there is a point of infection, it is up to State officials to eliminate it at that point. We have now asked the Attorney General to do it. We are assured that you are starting next week, are we not? Is the representative of the Attorney General gone? I guess so. But you may rest assured, Idaho, that we will keep on our public officials to get rid of anything here in Utah.

MR. STEIN: Perhaps we can illuminate this, if I can interrupt a moment, Mr. Preston. Did you say that the office of the Attorney General indicated they would start before classification?

MR. PRESTON: They indicated today in the hallway that they would start by injunction proceedings in southern Cache County this week.

MR. STEIN: All right. I don't want to get into a controversy over Utah law --

MR. PRESTON: You're already in it!

MR. STEIN: But this is the way I read the law in Utah too, and this is the way I thought I read that Attorney General's opinion on this matter, but I may be mistaken, and I'm sorry he is not here to clarify it.

MR. PRESTON: You are right. There has never been a law in Utah; there is not one now, that requires stream classification to prevent pollution. Don't tell the Attorney General I said that, will you? I would like a copy of his opinion.

MR. STEIN: Let's see if we can arrive at the area of agreement where we can. Do you want to say any more, Mr. Preston?

MR. PRESTON: No. Thank you.

MR. STEIN: I think we have agreed on the factual situation. Do any of you people here want to talk in terms of a time schedule for remedial action?

MR. THATCHER: Nothing beyond what I have presented in the statement.

MR. STEIN: And how about you, Mr. Anderson?

MR. ANDERSON: No more than I have already said.

MR. GREEN: If you really want a time schedule from Wyoming, we'll give you one. I'm fairly sure that we can say that Evanston will have a full sewage treatment plant within the next twenty months, and we're not even being asked by the Public Health Service for such a thing.

MR. STEIN: That is pretty close to October, 1961, isn't it?

MR. GREEN: Yes. Our usual system is three months for preliminary, six months for final plans, and nine months for construction.

MR. STEIN: I think we will have to let the summary of the conference stand where it does, unless we have any further statements.

MR. THATCHER: Mr. Chairman, I have one question, if I may go back a little.

MR. STEIN: Surely. Go ahead.

MR. THATCHER: You mentioned the streams that could be classified as interstate, within the meaning of the Act.

MR. STEIN: Yes.

MR. THATCHER: Do you include in that irrigation canals across State borders?

MR. STEIN: Yes, we do, and let me make this very clear. We have not had this point specifically litigated under our Act, although I think if you examine water laws anywhere you will find that when we speak of a water course we speak of a natural or artificial water course, and both are included. I don't think that anyone has ever raised a serious question that this was not included. In other words, the fact that it is an irrigation ditch, I think, puts it both under the jurisdiction of the State and our jurisdiction where we do have jurisdiction. I don't believe there is very much doubt on that question.

MR. NASI: Mr. Chairman, if I may, I want to clear up just one slight technical point. In your summary you stated, I am quite sure, that you were referring to the treatment of sewage wastes, rather than making an all inclusive statement of the sewage and industrial wastes. I just want to be sure that we correct the statement to --

MR. STEIN: By what?

MR. NASI: In this entire very recent discussion, in the summary, it relates to both sewage and industrial wastes.

MR. STEIN: Both sewage and industrial wastes in the factual situation. The proposal I made for the time schedule also relates to both.

MR. GORDON: I understood, Mr. Chairman, you were talking about when the beet packing season would start, and what kind of a schedule you ought to lay down for that, and then you began dragging in all of these related sewage treatment plants and other problems. You were talking on one hand about industries,following examples of industries that you have before you here today. Then you turned around and began talking about when you can improve and expand a public facility. I think there is where your confusion has come. My remarks dealt purely with the facilities of the canneries and the beet operations that have not yet come in line.

MR. STEIN: That may be a point. Do you want to address yourself to that? Mr. Anderson, would you think that the industrial wastes can have treatment facilities by October first of next year?

MR. ANDERSON: I am not going to attempt to give you an answer on that without more consultation with them and their engineering staff on this thing. I did not come here prepared to make any such statement, and I am certainly not going to make a flying guess at it.

MR. STEIN: We appreciate that.

MR. ANDERSON: These things require more --

MR. STEIN: I thought we had discussed that. How about you, Mr. Thatcher?

MR. THATCHER: I don't think I would have anything to say except that the Utah Board would probably not be willing to move against one class of waste, and not considering all of them. I don't believe you can separate them. I think it is a waste disposal problem in an over-all concept.

(From audience): Mr. Stein, may I make a comment?

MR. STEIN: Yes. Would you identify yourself, please, and come up to the microphone?

MR. HAGEMAN: My name is W. C. Hageman, and I am representing the California Packing Corporation. The California Packing Corporation is willing to cooperate with both State agencies involved. However, at the present time we do not know to what extent we are involved, nor what procedures may be necessary. We are treating our wastes at the present time. As to the time limit, I might point out this fact that some of the outsiders may not be aware of. This area was hit by very severe frost on the night of June 20th. The farmers in the area have suffered a tremendous loss. We, as canners, have suffered a tremendous loss. The business men who depend upon a farming area and a farming community have also suffered, as well as the growers and the canners. I think that that should have some bearing on a time limit. As I stated previously, we are treating our wastes.

MR. STEIN: Would you care to say what a reasonable time limit would be?

MR. HAGEMAN: It is not up to me to decide.

MR. STEIN: I appreciate your position. I think it is a very fair one. Do you want to continue?

MR. HAGEMAN: No. I just wanted to point out those facts.

MR. STEIN: I appreciate that. I would like, before you begin, Mr. Green, to point out just one thing. In the calling of this conference, we stated, and I quote from the letter calling the conference, sent to Idaho, Utah, and Wyoming, "the major purpose of the Second Session of the Conference will be to establish a time schedule for remedial measures to be taken by persons responsible for sources of pollution". I know that two of the three State representatives here are not prepared, and they have so stated, to discuss time schedules. However, when the conference was called, they were placed on notice that this would be the major purpose of the conference.

MR. ANDERSON: Mr. Stein, simply the fact that you pointed out that this was the reason does not necessarily mean that some of these things are feasible to do on short notice like that.

MR. STEIN: We recognize that. What has been pointed out, and I think we have to look at this in consideration, is that we have a statutory notice, and the time to give you a notice specified by statute. What has also been pointed out, and I ask that you keep remembering this, is that this is not a new situation. We were here in 1958. I see a Bear River report dated 1955, and I think there were reports before this. I don't think we are proceeding here and catching the States, or the industries, or anyone else, by surprise. This is something which, to my mind, is one of the most vital questions of protecting the resource here; and the assumption we made was that the States had given a lot of thought to it, and that the industries had given a lot of thought to this problem since 1958. That is why we called the First Session of the conference, and adjourned.

I think we are faced with a situation here where we have a rather substantial area of agreement, and I don't want to see that dissipated in a small area on which we cannot come to a conclusion, because I don't believe there is any disagreement in any area that I have seen yet. The factual situation, we are pretty much agreed on. The question of classification, obviously, is a question for the internal operation of Utah to handle.

The question of a time schedule has not been settled, and obviously cannot be accomplished, and this goes for industrial or municipal wastes. I just made a proposal. The proposal was neither accepted nor rejected, because the States were not prepared to come to a conclusion. We did get an expression from Wyoming, which we very gratefully accept, and which we think is very reasonable. I don't think that we and Wyoming consulted on this matter before; at least, I know I didn't, and we are pretty close. When we deal with these problems in various cases where cities in the same area have the same problem, we come up with a reasonable time schedule and one on which all hands can agree. I do not believe the proposal we have made for the industrial wastes is unreasonable.

We started off also with this as a starting point on municipal wastes. In the absence of a determination or a representation that there are special municipal problems, or a counter proposal for Preston to come up with a reasonable time schedule, I don't know what alternative we are faced with. We are certainly receptive to one.

MR. GREEN: May I say something, Murray? First of all, this time schedule I mentioned happens to be established Wyoming policy since 1955. I was not inferring that it should be accepted by these areas that may have specific conditions, or anything else. Certainly the two State sanitary engineers know their areas far better than I.

One thing I would like to suggest. As I understand this, and correct me if I am wrong, your request for a time schedule is for reporting to the Surgeon General, and may or may not be accepted. Is that correct?

MR. STEIN: That is correct. Now, I want to say this. Where the Conferees have unanimously agreed to a time schedule, the Surgeon General has in the past always accepted it.

MR. GREEN: Well, obviously, Mr. Anderson was in a position, and I believe in slightly worse position, inasmuch as he had had the report by Mr. Kittrell only a very short time and wasn't too sure what it contained, than the rest of us here. We all had some ideas, but that is about as far as it went. If I were in his position, certainly I would want to go back and consult my Board of Health and my Advisory Board. I would suggest this as a matter of thinking, at least as an area of negotiation, that the two State sanitary engineers furnish the Surgeon General within a specified time a written report on their intent to carry out this program, setting out a time schedule, giving them time to consult, as they should, with their own organization.

MR. STEIN: Is that agreeable? What are your thoughts on that?

MR. THATCHER: I think we have given you as much of a time schedule as we can, until we proceed further and have more details. I am not authorized by our Board to make any further statement beyond that at this point.

MR. STEIN: Mr. Anderson, do you have any comment to make?

MR. ANDERSON: No. I think the point here is something like Mr. Green said. We are down here not knowing quite what was to be expected. Certainly I cannot make a statement that will be binding on our Board of Health or my Health Officer. This will require some time to study it, to get even what I think would be reasonable. I haven't even got to that point yet, so I am in no position to --

MR. STEIN: I think Mr. Green has made a proposal, and I think it is open for discussion. We can come back with two things. One, we can say to the Surgeon General that the Conferees could not agree on a time schedule. Another, we could say that the Conferees, at least those representing two States, because we do not have jurisdiction over Wyoming, and it is above and beyond the call of duty in a sense -- but, as an alternative, we can go back to the Surgeon General and say we have arrived at this agreement: that both Idaho and Utah will get together and by X date they will send you a proposed time schedule for your consideration. I would hope that Idaho and Utah would consult with Wyoming before this is done, if the proposal is accepted. This is what I understand is the proposal by Mr. Green. Now I am entertaining discussion on that to see what you think.

MR. ANDERSON: I would answer that in two ways. One, I would have no objection personally to doing such a thing. I am not in a position to commit our Board to that official action at the present time.

MR. STEIN: We recognize that.

MR. ANDERSON: I think that I can go back to a letter which we have already written to the Utah Water Pollution Control Board, suggesting that we approach this jointly in working out a program. This was not in accordance with their thinking at the time, and I do not know that that proposal is still valid.

MR. STEIN: Mr. Thatcher, would you be agreeable to that proposal?

MR. THATCHER: That Idaho and Utah get together, and by some specific date --

MR. STEIN: Submit a statement to the Surgeon General.

MR. THATCHER: On progress made, or agreements arrived at?

MR. STEIN: Proposing a time schedule, what you would consider a reasonable time schedule for completion of facilities,with such interim steps as you might see fit.

MR. THATCHER: I think we can very definitely say that we will do this as rapidly as we can. Our Board has already made the statement that they will meet with the plan outlined this morning as expeditiously as possible, and I don't believe we can go beyond that.

MR. STEIN: All right. The point I am making, if we are to come back from this, if you could agree, and I don't see why these things cannot be done concurrently. The basis of this discussion can be, assuming, and I think you can get together with this, that the classifications proposed by you will be adopted -- let's assume that they are adopted -- can't you within a relatively reasonable time come up with a proposed time schedule for remedial action?

MR. THATCHER: I think we could,but this is not a proposal that I alone would do. This is something that our Board would act on as an official body, and I cannot commit them to a definite time schedule.

MR. STEIN: Let's move this one step further back. Could you both take this proposition back to your Board?

MR. THATCHER and MR. ANDERSON: Yes.

MR. STEIN: And then tell us when we could have an answer as to whether you will entertain it and do it. Is that a fair proposal?

MR. ANDERSON: I have no objection to proposing action to the Board.

MR. THATCHER: Why don't we just leave it that we will present it to the respective Boards, and --

MR. STEIN: Go ahead, Lynn. Is this agreeable?

MR. THATCHER: Now, exactly what are we talking about?

MR. STEIN: What we would do is this. We are operating on the basis of Mr. Green's proposal.

MR. GREEN: May I say just one thing, interrupting you? The thing that I like about this course now is that it retains the right of individual action by the States, which the Public Health Service is also supporting. It is my understanding, Mr. Chairman, that if the States fail to set a time schedule,then the Surgeon General is forced to set such a time schedule. Is that not correct?

MR. STEIN: That is the way I read this. The law says this: "If the Surgeon General believes that reasonable progress is not taking place, then he recommends remedial action and gives a time of not less than six months". Given the facts here, on the basis of these facts, I think we can pretty much guess whether the Surgeon General will think that reasonable action is taken to abate this pollution.If he comes to the conclusion that it is not,then he is required to make this recommendation. My feeling on this has always been that it is always much better for the States to agree, and to send that to the Surgeon General, and he has been very sympathetic with that, than to have the Surgeon General do that unilaterally from Washington.

Now as I understand this again, both of you gentlemen say that you are not authorized to do this,and you did not have enough time to examine Mr. Kittrell's report,and all the other reasons you have given.

The proposal is this. That both of you go back to your respective Boards and ask them if you could be authorized to send in a joint proposal for a time schedule for remedial action. I don't think this proposal has to wait -- this is just from a logical point of view -- for the 180 days for classification, because I think the proposal can be made on an assumption. If that does not prove correct, we can meet that at the time, but I think we can proceed almost immediately, as soon as you can canvass your Boards for this proposal. Then you can let us know if you will entertain this proposal. We would then recommend that the Surgeon General wait until we get this recommendation from you. I think we would have to go back with a time certain.

To spell out this whole thing, I think we would have to go back with two dates. The first date would be when we would hear from each State as to whether you are agreeable to this, and the second date would be when the Surgeon General could expect to get the proposal from you for a time schedule. Is that substantially what you had in mind, Mr. Green?

MR. GREEN: Yes, that is right. That way it leaves the choice of action with the State, which is very important in such a matter.

MR. STEIN: We are perfectly agreeable to bring that back to the Surgeon General, if the States are agreeable also. Are we agreed in principle on that?

MR. THATCHER: Your proposal is, in effect, that the two Boards get together and make a progress report to the Surgeon General at some date we have not yet selected.

MR. STEIN: I think we will have to do that before we leave. I don't think it is so much a progress report, but a recommendation to him of what a reasonable time schedule would be to secure installation of remedial measures.

MR. ANDERSON: I think we would want to make one point clear. I don't want to take the position that I am opposed to getting these things cleaned up -- I am working every day to try to get --

MR. STEIN: We recognize that.

MR. ANDERSON: I want to point out that sometimes this type of hard-and-fast thing can lead to the detriment, rather than the making, can make it unreasonable; something that it is impossible for somebody to meet makes us look foolish, and I am not in a position to go any further.

MR. STEIN: Mr. Anderson, this is precisely the point. I don't think we are suggesting, or would want to suggest, something that is impossible or unreasonable. We have a long record here that has been built up. I don't think anyone yet has really accused us of coming forward with an impossible time schedule. Again I say that any time the States unanimously have made a reasonable proposal in the past, the Surgeon General has accepted it. However, I think we can go back to hit this just on principle. Are you both willing to go back and canvass your State on this matter, to see if it would be agreeable to both States to recommend a time schedule?

MR. GREEN: Mr. Chairman, I would like to add one comment. I can think of no two people at this conference, or in fact, in the United

States, who are as well equipped through their own intimate knowledge of their States, to set such a time schedule. I don't think there is any question of this. I hope I am right that I have heard nothing in this room to cast any reflections on Mr. Anderson or Mr. Thatcher. I personally feel that they are doing their job as well as anybody in this room.

MR. STEIN: We perfectly agree with that. I don't think there is any implication of anything other than that. What we are trying to do is bring this to a reasonable conclusion, so we can go out of here with something positive.

Would it be agreeable for -- I come back again to the same question, because we have to get over this hurdle -- would it be agreeable for Mr. Anderson and Mr. Thatcher to go back to their State agencies to see if their State agencies are agreeable to the development of a proposed time schedule for submission to the Surgeon General?

MR. THATCHER: All right. I will do that.

MR. STEIN: How about you, Mr. Anderson?

MR. ANDERSON: Yes, that is agreeable with me.

MR. STEIN: Well then, if that is agreeable, if both States are agreeable -- if they do NOT agree, you will so notify us -- if both States agree, then it is agreeable that the time schedule be developed. Now, I think because one follows the second, you will obviously do what your States agree to. May I ask, for us, how long we can say it will be before we can expect an answer from your State -- for you to give the proposition to your State agency and come up with an answer to the Surgeon General whether you will or will not come forward with this time schedule? Or proposal?

MR. THATCHER: I think as far as we are concerned, in view of the statement our Board has already adopted, it could not be anticipated that this would be a very fruitful move unless we extended it on beyond the time that has been specified for the next two moves on the part of our Board. They will probably come out with the same statement we have, unless you project this date we are talking about now beyond the time that they have proposed for these other actions. It depends on what date you specify. I can go back and put it in their laps again.

MR. STEIN: I think maybe we are not explaining this right. I am not talking about coming up with a proposed time schedule. I am talking about the first date -- coming up with a statement from your Board that it would be agreeable with them to propose a time schedule.

MR. THATCHER: That's kind of complicated.

MR. STEIN: I don't know how it works here. Perhaps you can canvass your Board, or you might have to have them meet.

MR. THATCHER: In other words,all you want is a statement from these Boards indicating whether they are agreeable to establishing a time schedule.

MR. STEIN: That is correct. And we will send this to the Surgeon General.

MR. THATCHER: All right.

MR. STEIN: Well, how long do you think that would take? Can we establish a date when the Surgeon General could expect an answer?

MR. THATCHER: I would guess if we had sixty days, it would give us time to get the Board together and put a statement together for you.

MR. STEIN: Do you mean you would need sixty days to determine whether you are going to provide a time schedule?

MR. THATCHER: We may not need it, but this is only one of our functions, and our calendar is pretty full. I wouldn't guarantee to you that I could go back and in the next month pick a date that is free, when we could get the Board together. If we could do it faster, I certainly would agree to it, but I would hate to guarantee that we could.

MR. STEIN: Could you not canvass the Board on this? Maybe this is a big issue.

MR. THATCHER: This is not an accepted procedure on our Board. We could do it, but I think that probably there are a lot of disadvantages to canvassing members when they are not present to enter into the discussion. I can put the matter to the Chairman of the Board,but I hate to make any promises about actions that I cannot control personally.

MR. STEIN: Mr. Anderson, how long do you think it would take you?

MR. ANDERSON: I would have to take the same position. I can't even guarantee that the Board will listen to me.

MR. STEIN: No, but you can --

MR. STEIN: No, but you can --

MR. ANDERSON: I don't even know when they are going to meet, so --

MR. STEIN: You can answer this --

MR. ANDERSON: I will do it as quickly as I can do it, and that is all I am going to say. In the next few days I will make every effort to do it.

MR. STEIN: I recognize that. Here is the problem we have.The Surgeon General has to act reasonably in this matter. I think it would be wise if we came up with a recommendation to him for a suspense date, at least on the first, if not on the second, where if he did not get a reply from you in X days, he would have to determine what he is going to do. That is why, I think --

MR. ANDERSON: What would you propose for this date we are talking about?

MR. STEIN: I would propose thirty days as being a date for the proposal --

MR. ANDERSON: But my Board meets not oftener than three months.

MR. STEIN: Between the meetings of the Board -- we have faced this proposition in many States -- between Board meetings, on matters of this kind, this generally is handled either by correspondence or by telephone. I don't think that we can, and I say this with good conscience, that we can go back to Washington and present to them that this is the kind of a determination that you have to have a plenary Board session to handle. I think a month would be reasonable. At that time, when we have that reply in a month, you could at that time -- if the answer is "no", the answer is clear -- if the answer is "yes", you could tell us when you could supply your proposal. Is that a fair statement?

MR. THATCHER: I got lost. I didn't get beyond having them say whether they are agreeable to setting up a time schedule. You want them to say whether they are agreeable to it, and then also to say when they will do it.

MR. STEIN: That is correct. I think that was the proposal at first. I was going to try to establish both dates here, but I do not think that would be fruitful, since we are having so much trouble with the first one. You might have more time to think about the second one, and come up with a proposal. In a month, in other words,if you would write to us and tell us whether this was an agreeable proposal, and when you would come up with a time schedule.

MR. THATCHER: I would be very happy to take it back to the Board.

MR. STEIN: And see what your Board says. Well, with that, I think we are about concluded, unless anyone here has anything to say, or there are any overt or covert reservations or statements.

MR. THATCHER: Did you say this agreement is a thirty day -- in other words, by August 19th?

MR. STEIN: By August 19th.

MR. THATCHER: This is an order?

MR. STEIN: No, it is not an order, sir. Absolutely not.

MR. ANDERSON: I will attempt to do it, but I can't agree that I will be able to do that, because I don't know that I can.

MR. STEIN: By August 19th what we would want to do is have a letter from you, saying whether you are agreeable to your States getting together and proposing a time schedule, and when you would think you would have the time schedule and would be able to give it to us.

MR. THATCHER: You definitely want this to be a joint action of the two States?

MR. STEIN: Not necessarily. We would prefer it to be joint, and just speaking personally, I would prefer to have Wyoming consulted, because I think this is a three-way operation on the Bear River. We are not going to do anything in this matter without our consulting Wyoming anyway, and we think it is preferable that this be handled on a State level, because as you well know, that is our mode of operation.

MR. NASI: Mr. Chairman, would you care to reiterate at this time, because it is lost back in the minutes of the meeting, the fact that your initial recommendation was the question of the reasonableness of effecting this deadline as of October 1, 1961? That was your recommendation.

MR. STEIN: That was the recommendation in the proposal that was just made in the discussion. That was for industrial wastes. Then I also made that as a proposal just to start, for municipal wastes. We have heard no contrary proposal on either side. There was no agreement.

Let this show. What I meant was there was certainly no agreement, but no one else made a counter proposition. Is that correct? But this was just a proposal. I don't think this is a summary of an area of agreement. I think our area of agreement is that by August 19th the States -- collectively, if possible; individually if they wish -- will notify the Surgeon General, informing him whether the States would be willing to submit a time schedule for remedial action, and specifying in that letter when the proposal for remedial action will be forthcoming.

MR. GREEN: Mr. Chairman, am I correct that by the States, you mean the States of Idaho and Utah?

MR. STEIN: Yes, sir. We have received your proposal.

Is there anything further? Does anyone else want to say anything in this matter before we conclude? If not, I want to thank you all for coming.

We have a policy here which I would like for you to take back with you. You see, here we do not go back into executive session. We conduct all business right here in a fish bowl, in front of everyone. This is a kind of -- I won't say an experiment of the Government -- but it is part of our philosophy that we are a public agency doing the public business in a public manner. In other words, what you are likely to do in a situation of this kind is to see aspects of a situation that you would not see when people come to executive sessions. We believe it is all to the good, and is democracy in action, and everyone in the room has the right to know what goes on.

I would like to thank you all for coming, and for participating. I do think if you evaluate what has happened here, we have made considerable progress from the time we met two years ago. I do think, looking at this, that what we are discussing here are details. I think we are over the hump in this problem. I think the pollution problem in the Bear River Valley, or Cache Valley -- you may not call it Cache Valley on your side -- at least, in the Bear River drainage area, is going to be solved, and we are well on our way toward its solution.

Thank you very much. We stand adjourned.

APPENDIX A

ATTENDANCE ROSTER

Conference on Pollution of the Interstate Waters Of the Bear River, Second Session

July 19, 1960

Aleck Alexander	U. S. Public Health Service Dallas, Texas
Vaughn Anderson	Idaho Department of Health Boise, Idaho
Don Andriano	Utah State Department of Fish and Game Salt Lake City, Utah
K. E. Bailey	Amalgamated Sugar Company Lewiston, Utah
W. M. Burrus	Utah-Idaho Sugar Company Garland, Utah
Jack H. Berryman	Utah State University Logan, Utah
Paul A. Blanchard	Utah Power and Light Company Salt Lake City, Utah
Grant K. Borg	Utah Water Pollution Control Board Salt Lake City, Utah
Richard Boyle	Utah State Attorney General's Office Salt Lake City, Utah
S. Burnall Brown	Amalgamated Sugar Company Ogden, Utah
Dean E. Bischoff	U. S. Bureau of Reclamation Logan, Utah
Howard Burkhardt	Idaho Department of Health Boise, Idaho

L. B. Caine	Utah Water Users Association North Logan, Utah
N. V. Chamberlain	Utah State Department of Fish and Game Salt Lake City, Utah
Orson A. Christiansen	Bear River Commission Brigham City, Utah
S. A. Christiansen	Wyoming Stream Pollution Control Advisory Council Evanston, Wyoming
R. H. Cottrell	Amalgamated Sugar Company Ogden, Utah
Merrill C. Daines	Cache Chamber of Commerce
Honorable Henry A. Dixon	United States Congressman Ogden, Utah
Harry L. Elcock	Amalgamated Sugar Company Ogden, Utah
Gordon Erickson	Utah State Teacher on Health
Robert R. Evans	The Salt Lake Tribune Logan, Utah
Garry L. Fisk	U. S. Public Health Service Bureau of Reclamation Salt Lake City, Utah
Robert S. Gaddie	Utah-Idaho Sugar Company Salt Lake City, Utah
Seth Gordon	Water Pollution Control Advisory Board Sacramento, California
David P. Green	Wyoming State Department of Public Health Cheyenne, Wyoming
M. W. Gustin	Union Pacific Railroad Company Salt Lake City, Utah

W. C. Hageman	California Packing Corporation Ogden, Utah
Mark D. Hammond	Councilman, Preston, Idaho
Dr. Vaughn E. Hansen	Engineering Experiment Station Utah State University Logan, Utah
James R. Harlan	U. S. Public Health Service Washington, D. C.
Sylvester M. Heiner	Amalgamated Sugar Company Ogden, Utah
Dr. William T. Helm	Utah State University Logan, Utah
Ben Heywood	U. S. Department of Agriculture Soil Conservation Service Logan, Utah
Howard M. Hurst	Utah State Department of Health Salt Lake City, Utah
Vernal Jensen	Amalgamated Sugar Company Ogden, Utah
Wallace N. Jibson	U. S. Geological Survey Bear River Project Logan, Utah
Mrs. Grinnell Jones, Jr.	League of Women Voters Salt Lake City, Utah
J. C. Keane	Utah-Idaho Sugar Company Salt Lake City, Utah
Frank W. Kittrell	U. S. Public Health Service R. A. Taft Sanitary Engineering Center Cincinnati, Ohio
Daniel F. Lawrence	Utah Water and Power Board
Frank E. Long	Water Pollution Control Advisory Board Wyoming Stream Pollution Control Advisory Council Buffalo, Wyoming

Francis T. Mayo	Utah State Engineer's Office Salt Lake City, Utah
Grant W. Midgley	Legislative Assistant to Senator Frank E. Moss
Robert A. Moss	Utah Water Pollution Control Board Bountiful, Utah
Kathleen Mickle	Utah State Democratic Commission
Kaarlo W. Nasi	U. S. Public Health Service Denver, Colorado
Casper A. Nelson	Industrial Commission of Utah
Keith M. Orme	Amalgamated Sugar Company Ogden, Utah
H. J. Petersen	Councilman, Hyrum, Utah
Merrill Petersen	Cache Chamber of Commerce Logan, Utah
Blucher A. Poole	Indiana Stream Pollution Control Board Indianapolis, Indiana
Mrs. Paul B. Porter	League of Women Voters of Utah
Robert B. Porter	Utah Power and Light Company
Robert A. Potter	Bear River Water Users Association Garland, Utah
George A. Preston	Cache Chamber of Commerce, and Union Pacific Railroad Company
Donald G. Prince	Utah State Land Board Salt Lake City, Utah
A. F. Regenthal	Utah State Department of Fish and Game Salt Lake City, Utah
Reed S. Roberts	Utah State Department of Health Salt Lake City, Utah
W. A. Robinson	Public Service Commission of Utah

Hugh G. Rounds	Amalgamated Sugar Company
John S. Samson	Water Pollution Control Advisory Board Omaha, Nebraska
Dr. William F. Sigler	Utah Water Pollution Control Board Utah State University Logan, Utah
Dean R. Smith	Cache Chamber of Commerce
A. V. Smoot	Bear River Commission Corinne, Utah
Dr. George W. Soffe	Utah State Department of Health Salt Lake City, Utah
Murray Stein	U. S. Public Health Service Washington, D. C.
Calvin K. Sudweeks	Utah State Department of Health Salt Lake City, Utah
Honorable W. H. Terry	Mayor, Hyrum, Utah
Lynn M. Thatcher	Utah Water Pollution Control Board Salt Lake City, Utah
Lamont E. Tueller	Cache County Extension Service Logan, Utah
Ervin Van Orden	Councilman, Lewiston, Utah
Honorable O. S. Webb	Mayor, Preston, Idaho
Clark White	White's Trout Farm Paradise, Utah
Mr. and Mrs. W.H.Williams	Utah State University Logan, Utah
Vanez T. Wilson	U. S. Fish and Wildlife Service Brigham, Utah

APPENDIX B

IDAHO DEPARTMENT OF HEALTH
Engineering and Sanitation Section

STREAM POLLUTION CONTROL ACTIVITIES

During the past year, sewage treatment plants were completed at Idaho Falls, Pocatello, Sandpoint, Payette and Grace. The plant at Lewiston has been completed for some time; however, it is not yet in operation because high water has prevented the completion of a river crossing. An oxidation pond was completed at Genessee.

A plant is presently under construction at Weiser, and oxidation ponds are under construction at Wendell, Malad and Kamiah. The largest single project presently under construction in the state is the Bench Sewer District which is comprised of a suburban area and a portion of the City of Boise. The system is serving approximately 25,000 people. The Boise sewage treatment plant is being enlarged to accommodate this additional load.

Engineering reports have been completed or are being prepared for sewage treatment at Burley, Blackfoot, Soda Springs, Potlatch, Orofino and Shoshone. A number of additional communities are actively engaged in some phase of developing a program for sewage treatment as shown in the attached status report.

Industrial waste problems are rapidly becoming more acute in certain areas, largely due to the rapid expansion of the potato processing industry. Because of the lack of technical information and research data, actual accomplishments in the field of pollution abatement have been rather meager; however, one plant has installed settling ponds for removal of approximately fifty per cent of the B.O.D. load. A considerable amount of information has been gathered that we believe will lead to an economically feasible method of reducing the total B.O.D. of these wastes by 90 to 95 per cent. Such a reduction can probably be best accomplished by selected waste separations and some process changes.

The sugar beet processing industry has continued with its long range plan of process changes and treatment facilities that will eventually bring about a B.O.D. reduction from this industry to about ten per cent of its former load. So far this industry has reduced its waste load by roughly one half during the past few years.

The department has continued its policy of writing detailed technical reports on waste problems in the more critical streams. It previously prepared such a report on problems in the Main Drain near Rupert. During the past year a report has been completed on Indian Creek in the vicinity of Nampa and Caldwell. Reports are now in preparation on the Boise River and Rock Creek near Twin Falls. The reports encompass problems on wastes discharged to a particular stream with recommended reductions for each contributor necessary to restore the stream to an acceptable condition. It is planned that such comprehensive surveys will be continued.

Status of Municipal Sewage Treatment

Information in the following tables is based on records of the Engineering and Sanitation Section, Idaho Department of Health. Figures shown under "Population Served" heading are rough estimates only and may be high or low for any specific community.

Table I
Communities With Sewage Treatment Facilities

Under degree of treatment, adequate primary treatment consists of plain sedimentation, digestion and proper ultimate disposal of the settled sludge, and chlorination of the plant effluent. Approximately 35 per cent reduction in the biochemical oxygen demand (index of organic matter) of raw sewage is obtained by primary treatment. Secondary treatment consists of primary treatment plus biological oxidation of the effluent from primary sedimentation, and final sedimentation prior to chlorination of the plant effluent. In general, there are three types of secondary treatment, the trickling filter, activated sludge process and the oxidation pond. There have been numerous modifications in these two processes so that BOD reductions of 65 - 95 per cent may be obtained by secondary treatment depending on the design of the process.

The degree of sewage treatment necessary depends on the uses and characteristics, especially flow, of the receiving stream and the population of the community. Primary treatment is often adequate and it should not be inferred that secondary treatment should be provided for all municipal sewage.

A number of Idaho communities are utilizing oxidation ponds or lagoons as a method of sewage treatment. If properly designed and maintained, such ponds afford a degree of treatment at least equivalent to secondary treatment.

Community	Year Present Facility Constructed	Pop. 1950 Census	Est. Pop. Served by Treatment 1960	Degree of Treatment	Remarks
Alameda	1943	4,694	9,500	Primary	Treatment totally inadequate. Major enlargement or new plant needed.
Arco	1956		1,800	Primary	Secondary treatment Needed
Ashton	1920	1,256	1,000	Primary	Enlargement needed
Atomic Energy Comm.	since 1950				All installations have adequate sewage treatment.
Boise	1950	34,393	25,000	Secondary	Plant enlargement Under Construction. Treatment adequate.
Boise Bench	1960*		25,000	Secondary	*Sewers under Construction. Treatment by City of Boise
Caldwell	1956	10,487	10,000	Secondary	Collection System Improvements Needed
Caldwell Labor Camp	1940		1,200	Primary Subsurface Disposal	Effluent disposal unsatisfactory
Challis	1955	728	700	Primary	Adequate at present
Cobalt	1949	500	500	Secondary	

Community	Year Present Facility Constructed	Pop. 1950 Census	Est. Pop. Served by Treatment 1960	Degree of Treatment	Remarks
Coeur d'Alene	1939	12,198	12,000	Secondary	Treatment adequate. Plant needs some enlargement
Conda	1939	300	300	Septic Tank and lagoons	
Cottonwood	1958	689	700	Secondary (lagoon)	
Craigmont	1954	594	550	Primary	Additional treatment needed.
Filer	1939	1,425	1,000	Primary	New facility needed. Disposal unsatisfactory.
Fort Hall Indian Agency	1956		150	Lagoon	Satisfactory
Garden City	1954	764	1,000	Secondary	Additional Improvement needed.
Gooding	1952	3,099	3,000	Secondary	Satisfactory
Gowen Field	1941		400-1,200	Secondary	
Grace	1959	520	700	Secondary	
Grangeville	1953	2,544	2,400	Secondary	
Hazelton	1950	429	400	Secondary	

Community	Year Present Facility Constructed	Pop. 1950 Census	Est. Pop. Served by Treatment 1960	Degree of Treatment	Remarks
Idaho Falls	1959	19,218	22,000	Primary	
Jerome	1952	4,523	4,500	Secondary	
Kimberley	1955	1,347	1,300	Secondary	
Lewiston	1959	12,985	12,000	Primary	Plant completed. River crossing under construction.
Malad	1942	2,715	2,000	Primary Imhoff tank	New lagoon under construction
Meridian	1956	1,810	1,800	Secondary	
Middleton	1950	496	400	Communition and Chlorination only	Additional treatment needed.
Moscow	1959	10,593	12,000	Secondary	Enlarged -- 1959.
Mountain Home	1954	4,500 (1955 Est.)	6,000	Secondary	Needs major expansion.
Mountain Home Air Force Base	1943			Primary	Needs major expansion.
Nampa	1950	16,185	14,000	Secondary	Collection System Improvements Needed
Paul	1952	560	500	Primary	Additional treatment disposal site needed.

Community	Year Present Facility Constructed	Pop. 1950 Census	Est. Pop. Served by Treatment 1960	Degree of Treatment	Remarks
Preston	1942	4,045	3,500	Primary	Additional treatment may be needed.
Payette	1959	4,032	3,500	Primary	Under Construction
Pocatello	1959	26,135	25,000	Primary	Under Construction
Pierce	1955	544	500	Primary	
Priest River	1958	1,592	1,400	Primary	
Rupert	1936	3,098	3,000	Primary	Complete treatment and disposal site needed.
Sun Valley	1952		2,000	Secondary	Disinfection needed.
Sandpoint	1959	4,265	4,500	Primary	
Weiser	1960	3,961	4,000	Primary	Under Construction.
TOTALS		201,802	222,000		

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Table II
Communities With Septic Tanks

The following communities have constructed septic tanks for sewage treatment. Most of these installations are quite old and many of them are so overloaded and neglected that they cannot be considered as affording any appreciable degree of treatment.

Some of these installations, however, with minor additions and improved operations, could be made acceptable as primary treatment, even though septic tanks should not generally be considered as suitable installations for community sewage treatment.

Community	Population 1950 Census	Population Served
Aberdeen	1,486	900
Bonners Ferry	1,776	1,600
Cambridge	354	350
Council	748	650
Donnelly	200	150
Dover	226	100
Eagle	250	300
Elk River	312	250
Glenns Ferry	1,515	1,300
Homedale	1,411	1,400
Lapwai, Nez Perce Indian Agency	375	375
New Plymouth	942	800
Notus	313	250
Paris	774	600
Troy	531	460
TOTALS	11,213	9,485

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Table III
Communities With Sewers and No Sewage Treatment

Communities listed in the following table have sewage collecting systems but afford no treatment; however, many of these communities are actively working towards the acquisition of treatment facilities. The table is intended to give a rough indication of the degree of progress made in each community, as indicated by checks in the appropriate columns. Only communities that appear to be actively engaged have been checked.

Community	Pop. Served	Inquiries About Procedures	Engineer Employed	Report Being Prepared	Bond Election	Detailed Plans Prepared
American Falls	1,300	x				
Avery	210	(Not community owned--Chicago, Milwaukee, St. Paul & Pac.)				
Blackfoot	6,000	x	x	x		
Bovill	230					
Buhl	2,500	x				
Burke	500					
Burley	5,000	x	x	x		
Cascade	750					
Dover	100					
Emmett	3,000	x				
Firth	250					
Fruitland	500	x	x			
Gem	250					
Harrison	50					
Kellogg	4,500	x	x			
Kendrick	340					
Lava Hot Springs	540					
McCall	1,200	x	x	x		
Mace	400					
Marsing	643					
Montpelier	2,000	x	x	x	x	
Mullan	2,000					
New Meadows	550					
Nez Perce	300					
Orofino	2,500	x	x	x(Includes State Hospital North)		
Parma	1,000	x	x	x		
Potlatch	650	x	x	x		
Rexburg	2,700					
St. Anthony	1,700					
St. Maries	2,200	x (Will budget cost of engineering report in 1960)				
Salmon	1,000					
Shelley	1,800					
Silverton	400					
Smelterville	1,000					
Soda Springs	1,500	x	x	x	Tentative	
Spirit Lake	500					
Star	100					
Twin Falls	16,000	x	x	x	x	
Wallace	3,000					
Wardner	750					
Wilder	700					
TOTALS	70,613	49,850	40,850	35,850	18,000	

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Table III - continued

The following communities already have some degree of treatment but are making progress towards improving present facilities or providing additional facilities.

Community	Pop. Served	Inquiries About Procedures	Engineer Employed	Report Being Prepared	Bond Election	Detailed Plans Prepared
Alameda	9,500	x	x	x	tentative	
Coeur d'Alene	12,000	x				
Jerome	4,500	x	(Minor addition)			
Rupert	3,000	x	x	x		
Sun Valley	Disinfection equipment to be installed late 1960 or early 1961.					
Mountain Home	6,000	x	x	x		

Of the slightly more than 300,000 persons served by public sewers in the state, 76 per cent, representing 58 communities, have provided some degree of sewage treatment. Forty-one communities, representing a population of approximately 70,000 persons, continue to discharge raw sewage to the waters of the state. At least fifteen communities in this class, representing a population of roughly 50,000, are actively engaged in some phase of planning for adequate treatment facilities. In addition, a number of communities are taking the necessary steps to improve or expand existing inadequate or overloaded plants.

Table IV
Communities Without Sewers

The following communities have no public sewer system. Difficulties in these communities have been reported with private sewage disposal systems, especially in the downtown area. Improper sewage disposal practices are now endangering the health and in many cases are a potential source of contamination of water supplies. These communities should have adequate sewer systems and sewage treatment.

Community	Population 1950 Census	Community	Population 1950 Census
Albion	610	Lewiston Orchards	7,000
Bancroft	495	McCammon	578
Bellevue	528	Mackay	760
Bloomington	302	Melba	203
		Menan	430
Boise-Urban & Suburban Area	10,000	Midvale	231
Carey	150	Minidoka	113
Castelford	265	North Pocatello	575
Clark Fork	387	Oakley	684
Deary	320	Osburn	954
Declo	219	Plummer	395
Downey	748	Post Falls	1,069
Driggs	941	Rathdrum	610
Dubois	430	Richfield	429
Eden	495	Riggins	287
Fairfield	502	Ririe	527
Franklin	467	Roberts	341
Georgetown	404	Rockland	277
Hagerman	520	Shoshone	1,420
Hailey	1,464	Stites	227
Hansen	463	Sugar City	684
Heyburn	539	Teton	463
Idaho City	246	Tetonia	232
Inkom	434	Victor	431
Iona	502	Weippe	150
Juliaetta	365	Whitebird	100
Ketchum	757	Winchester	488
Kooskia	629	Worley	233
Kuna	534		
Lapwai	480		
		TOTAL	44,087

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Of the above communities, several have been actively engaged in attempting to obtain sewer systems and treatment facilities. The

Village of Kooskia has, in fact, held a successful bond election but has had difficulty in marketing the bonds. The Village of Deary has twice defeated bond issues but is interested in trying a new issue in the near future. The Lewiston Orchards area has twice defeated bond issues for the sewerage system. The Village of Heyburn has successfully passed a bond issue and intends to start construction in the near future. The Village of Mackay has twice defeated bond issues. Ririe and Shoshone plan to schedule bond elections in the near future. Hansen and Kuna are interested in obtaining sewer systems and have consulted engineers to develop a preliminary cost estimate.

INDUSTRIAL WASTES TREATMENT

Industrial waste problems in the state have been growing quite rapidly, and it is apparent that this increase will continue in the immediate future. The greatest increase in waste problems has been brought about by the rapid growth of the potato processing industry. At present we have record of sixteen plants which are converting potatoes into potato starch or food products, and we have information indicating the probability of four additional such plants in the near future.

The processing of sugar beets is the next most important source of organic wastes. There is also a considerable contribution from the processing of wood pulp as well as miscellaneous sources such as canneries, slaughterhouses and milk processing plants.

If we consider only the oxygen depleting powers in receiving water, it is possible to make a comparison of organic industrial wastes to domestic sewage. The term population equivalent is thus sometimes used to make a comparison on this basis. The table following is an estimate of the population equivalents of a number of industries.

Industry	Population Equivalent Of Total Waste	Population Equivalent of Reduction Achieved	Population Equivalent Discharged To Streams
Potatoes	2,700,000	200,000	2,500,000
Sugar	2,400,000	1,100,000	1,300,000
Pulp	600,000	--	600,000
Miscellaneous	500,000	50,000	450,000
Total	6,200,000	1,350,000	4,850,000

Reductions in industrial waste in industries are commonly more economically brought about through changes in plant processes than through actual treatment facilities. It is noted from the table the sugar beet processing industry has brought about a significant reduction of its waste largely through the installation of pulp drying to replace silo storage.

A great deal of effort has been exerted by department personnel and representatives of the potato processing industry in working out feasible means of reducing waste loads. At present, it appears that a feasible solution may be achieved through a combination of process changes, waste separation and conventional treatment methods. Department personnel have received a great deal of cooperation and help from all of the major industries in working toward satisfactory solutions to these problems.

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